P - Series

REFERENCE MANUAL

PHASE ONE

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This manual is written and edited by Espen Beck

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Table of Contents

1. Introduction 9

2. Unpacking the system 10
- Charging the batteries 12

3. Introduction to the P - back 14
- System overview 14
- Tethered or untethered operations 15
- General Hardware Setup 16
- Powering up the P back 16
- Indicator lights 16
- Green light 17
- Red light 17
- ISO Settings 17
- Power management and shutter latency 18
- Double exposure protection 18
- IR filter on the CCD 18

4. Quick Start 19
- This is what it takes to get started real quick 19

5. CF Card Usage 20
- Secure Storage System (3S) 21
- Always format your Memory card in the P-back 21
- Please note! 22
- General handling guidelines 22
- Using cards or micro drives in the card reader 22
- Mounting and dismounting 23
- Preparing the CF-cards or micro drives 23
- Formatting on a Mac OS X computer 24
- Formatting on a Windows computer 25
- Disabling iPhoto Autostart (Mac OS X) 25

6. Navigating the P back 27
- Menu buttons 27
- Home shortcut 29
- ISO and WB 29
- File format shortcut 29
- Button Lock shortcut 30

7. Play mode 32
- View modes 33
- Zoom 34
- Browsing inside Zoom 35

Delete. 35
Exit the Play mode 35
8. Menu Flow Chart 37
9. Menu mode 38
Capture Setup 38
ISO settings 39
White Balance 39
Custom White Balance 40
Custom white balance from Capture One 41
FileFormat 42
Shutter. 42
Play Setup 44
Backlight. 44
Auto Preview 44
Delete options 46
Brightness 46
Configuration 47
Storage. 47
Power Source 48
Format disk 48
Disk Checking 49
Camera type. 49
Power Save. 49
Ready beep. 50
Restore def. (Defaults) 50
Time & Date 50
About 51
10. P back - Mamiya 645 AFD 52
Shutter latency settings. 52
Mounting the P back on the Mamiya 645AFD 54
Mounting the Viewfinder Mask 55
Image orientation 56
Studio flash sync on the AFD body. 56
T-mode on the Mamiya 645AFD. 57
Mirror Up. 57
Mamiya RZ67 PRO IID 58
Studio flash sync on the RZ lens shutter 59
Shutter latency settings. 59
11. P back for Hasselblad V 60

Mounting the viewfinder mask 61
Mounting the P back 62
Mounting the P back vertically 63
Do not mount while in S or RS modes 63
Camera body specifics 64
Hasselblad 555 ELD 65
Shutter latency settings 65
No Motor cable on 555 ELD 65
Hasselblad 553 ELX 66
Hasselblad 501 CM and 503 CW without winder 67
Hasselblad 503 CW with Winder CW 68
Mamiya RZ67 Pro II adaptor 69

12. H 101 - P back 72
Camera LCD display 73
Viewfinder information 74
Auto exposure 74
Double exposure protection 74
Image orientation detection 75
IR filter on the CCD 75
Mounting the viewfinder mask 76
Mounting the H 101 - P back on the Hasselblad H 1 77
Use of cables 78

13. P back for CONTAX 645 80
Auto exposure 81
Double exposure protection 82
Image orientation detection 82
IR filter on the CCD 83
Mounting the focusing screen 84
Mounting the P back to the CONTAX 645 85
Use of flash sync cable 86
Operating the camera from the host computer 87
TTL flash 88

15. Large format photography 90
Shutter latency settings 91

16. Lens Cast 92
What is Lens Cast? 92
Why does it occur? 92
What does it look like? 92
How do i get rid of it? 92

Large format and stitched images (Mac) 94
4 Simple steps to calibrate ON fixed lenses (Win) 96
Large format and stitched images (Win): 97
17. Maintenance 98
Cleaning the CCD 98
18. Specifications 100
Full frame solutions (Magnification factor 1,1). 100
Smaller than full frame solutions (Mag. factor 1,3 - 1,4) 103
19. CF Card and CardReader 106
Shipping products 106
Sandisk Product Registration. 107
Sandisk Technical Support 107
SanDisk Warranty. 107
Rescue utility, when a card is unreadable 108

1. Introduction

Thank you for choosing a Phase One P - Series digital camera back solution.

The Phase One P - Series, provides you with the advantage of having the most powerful digital camera solution regardless if you are working portable in the field, tethered in a studio, with portrait, landscape, fashion,wedding, product, architectural or other type you will always be able to find a P-system that fits your needs.

The Phase One P-series system gives you the absolute best solution when it comes to image quality and workflow.

The Capture One raw workflow software for Mac OS X and Windows is the same as all Phase One single shot products. The Capture One online user guide is a general manual for this software.

This manual “P - Series - Reference Manual” covers specific P - Series features and functionality.

The P - Series comes in a suitcase and is ready to be used right out of the box.

Phase One is committed to providing the best solution for the professional photographer.

We sincerely hope you will enjoy working with this new and innovative product.

2. Unpacking the system

The suitcase contains small compartments for all the necessary parts; CF cards, CCD Cleaning Kit, Camera back and the batteries and the charger. (Suitcase and system contents may vary depending on purchase: Classic or Value added)

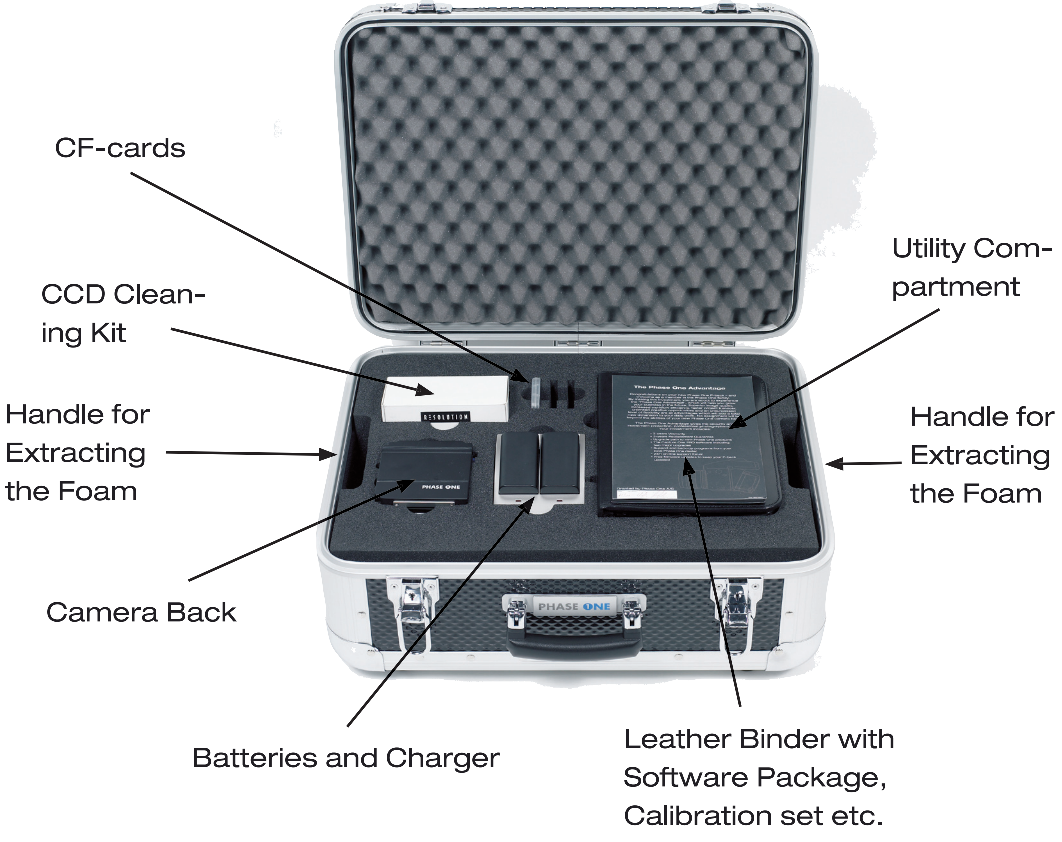
The Software package, this manual and the LCC calibration kit is included in the Phase One Leather binder that functions as a lid over the Utility compartment.

Lifting this lid will reveal the camera cables, CF-card-writer and the international adaptor set for the charger.

In daily usage, the utility compartment can be expanded by pulling out the square-to-circle foam, making the room ideal for use as camera body compartment.

It is also possible to pull out the foam and use the supplied deviders and Quick snap tape (located under the charger) to configure your own system suitcase (Value adde suitcase only).

This makes it possible to store, both camera back, camera body and a number of lenses in this practical case.



CF-cards

CCD Cleaning Kit

Handle for Extracting the Foam

Utility Compartment

Handle for Extracting the Foam

Camera Back

Batteries and Charger

Leather Binder with Software Package, Calibration set etc.

Charging the batteries

When the system is unpacked the first thing to do, is to give the batteries a full charge.

The two 7.2 volt Lithium-ion batteries comes mounted in the charger.

Only one battery is used in the P back at a time, but it is recommended to charge both batteries fully before you start.

While charging the batteries, you can still use the camera back if you connect it to the IEEE1394/FireWire port on your computer.

Start by opening the suitcase, remove the software package and the calibration set placed as a lid on top of the Utility Compartment to the right, and pull out the power supply from there.

The charger can adapt to voltages within a range of 110 to 250 volts.

It comes with an international set of source outlet adaptors (placed in the utility compartment), please select one that fits your outlet, and mount it by sliding it in from the top.

Connect the unit to the outlet and charge the batteries (approximately 2,5 to 3 hours).

While charging, the charger can either remain in the suitcase (Warning: the lid has to be open to prevent it from overheating) or you can pull out the charger, fold out the support stand on the back, and place it upright on the table.

The charger has two red light indicators. While these are on the battery is not fully charged, and should be left in the charger until the red light starts flashing or preferably turns off to gain a 5% extra power.

Permanent lighting LED indicates fast charge, when the LED starts flashing the battery is practically full and can be used. If the battery is left in the charger for as long as the LED is still flashing, 5% extra capacity can be gained. All charging is finished when the LED turns off with the batteries connected.

After the first initial charge, the batteries can be charged one at a time.

Disconnect the batteries again from the charger by pressing the battery slightly against the unit, and at the same time sliding the battery up and lift it off.

Warning notes!

Only use original mains adaptor 12 V DC.

Never apply excessive force when connecting the batteries.

Keep all contacts clean.

Do not force down any of the contacts.

Do not short cut the contacts.

Never store the batteries in the charger, connected to an outlet for an extensive period of time.

Do not expose to heat or naked flame.

Do not dismantle or carry out any alteration to the product.

TWIN V102
Lithium Ion Charger
hähnel

3. Introduction to the P - back

System overview

The Phase One P back is designed specifically to fit on one of several brands or models of medium format cameras.

This overview section will deal with generic features, available in all these different models, like for example, tethered or untethered operation, preview display functions, the menu system controls (they all have four buttons to control the settings in the back) etc.

Certain camera specific explanations are placed in a special section later in this manual. These can be how to attach the P back to the camera, how to install the focusing mask provided, special cable connections and other considerations.

You might want to look into the camera specific section before returning to the overview to learn about your specific configuration needs.

Now lets take a look at the generic parts of the P back.

Tethered or untethered operations

The P back can be operated either as a fully portable unit powered by the embedded battery and shooting to a compact flash card or micro drive which is inserted in the CF-card slot on the left side of the camera back.

The advantages of using it as a fully portable device are obvious, but operating tethered has advantages too.

First of all when operating in a studio, where connected to a computer via FireWire you are not dependent on battery power or storage media, you can capture directly to the Phase One Capture One Raw workflow software on either Mac or PC, powering the P back via FireWire even without the battery or CF-card inserted.

When operating tethered you have the option of capturing the images to CF-card or transferring captures directly to the currently assigned capture folder in the Capture One application on the computer hard disk.

The display on the P back can either be set to off while shooting tethered or to display the images while they are shot, just as if shooting untethered.

When unplugging the P back from the FireWire, the P back will default to untethered mode, capturing to CF-card or micro drive, and using the battery for power.

Also when capturing tethered to a laptop with 4 pin mini 1394/FireWire without power it will require a battery in the P back.

Using the four menu buttons you can setup the preferences for all these operational features.

I.e. the display time of the images, time before backlight is dimmed, ISO, file format and white balance.

For more information on capturing tethered with the Phase One Capture One application please consult the online user guide available in the Capture One Help menu.

General Hardware Setup

The P back is designed to be used with the new medium format cameras prepared for digital camera backs.The use on these camera bodies can be done without any cables attached between the P back and the camera body or lens. All timing and communication is done in the electrical interface contacts in the connecting plate.

Capturing images with the FlexAdaptor on large format camera or a camera body without the digital interface is supported by connecting the special lens sync cable that comes with the P back. For a guide to usage on a specific camera body, digital or not please consult the corresponding chapters later in this manual.

Powering up the P back

When the camera back is connected to the body, and a battery is inserted or the IEEE1394/FireWire cable is connected. The Camera back can be turned on by holding down the "Power" button just below the P back display.

Indicator lights

When the camera is powered up you will see a short blink in the green and red LED's in the right hand side of the display and you will hear a ready beep. The lights will turn off immediately. This is an indication that the camera is ready to capture. In general, if no light is on the camera is ready.

Green light

When capturing an image the green light is blinking rapidly to indicates that the P back is busy.

Constant green light comes on if the backlight of the display is dimmed to indicate that camera is still ready even though the screen is dimmed.

(The time before this happens can be set in the P back and is described later under "Menu mode")

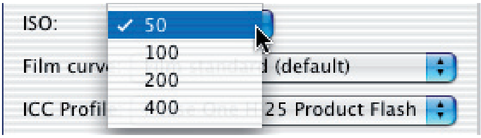
Red light

If the red light is on this indicates that the P back is writing to the storage media.

The same indicator is located just beside the CF-card-slot under the cover in the left side.

When the red light is on do not remove the card from the card slot, as this can damage the formatting of the card and image and data might be lost.

ISO Settings



The default film speed of the P back camera back is ISO 50. However, this setting can be changed to ISO 100, 200, 400 or 800 using the menu system (when untethered) or in the Capture panel of the Capture One application (When tethered).

Power management and shutter latency

The CCD on the P back constantly needs to be cleared from previous data before an exposure. This requires some power consumption. On electronically controlled camera bodies the power consumption can be drastically reduced by setting the shutter latency to long latency in the P back or inside the Capture One Application (Please see the section specific for your camera body for more information on what latency setting to select).

Double exposure protection

It is not possible to accidentally double expose the image by capturing one image quickly after another when the P back is used on i.e. Mamiya 645 AFD or Hasselblad 555 ELD. The electronic communication with the body ensures that the P back is ready before allowing release of the next shot. On other camera bodies not using the electronically interface from the P back, the user has to wait for the ready beep signal before releasing the next shot.

IR filter on the CCD

The IR filter (Phase One TG1 Infrared cut-off filter) is permanently mounted on top of the CCD.

The filter may not be removed for several reasons:

- The focusing of the P back camera back will be damaged.
- It is only possible to remount the filter without dust in between the filter and the CCD if you have access to special clean room facilities.
- The Phase One Product Warranty is terminated.

4. Quick Start

This is what it takes to get started real quick

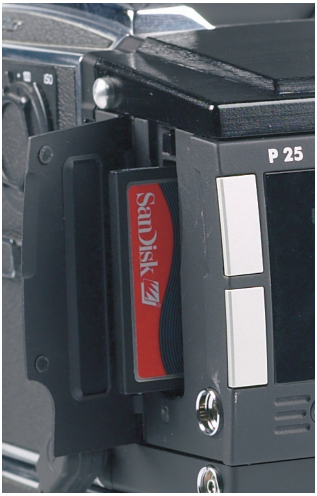
1. Charge the batteries (Described earlier)
2. Install the focusing Screen (Described in camera specific section later)
3. Consult the Camera specific section for special cabling requirements for your solution.
4. Insert Battery or connect IEEE1394/FireWire (for power)
5. Insert CF-Card or connect IEEE1394/FireWire (To shoot tethered directly to the computer)
6. If shooting tethered Launch the Capture One Application
7. Otherwise Shoot the images to CF-card, import them using the Capture One Application and a card-reader.

5. CF Card Usage

When working with CF-cards, card readers and digital cameras it is very important to follow a few rules, to avoid loss of data or uncontrolled behavior.

Phase One recommends that you test-drive all new Compact Flash™ cards (including the one enclosed). By doing an initial test to verify that the capture files are stored properly on the card and can be accessed on a computer you will avoid unpleasant surprises on location or when you return from a job. Compact Flash™ cards are manufactured by other suppliers, and Phase One cannot guarantee that the cards are not defected.

Inserting and ejecting on the P back



The compact flash card or micro drive is inserted in the hidden slot located under the cover on the left hand side of the P back.

Insert the card with the brand label facing backwards as shown in the image.

When the card is fully inserted no parts are sticking out and the cover can be closed.

To eject the card push the small button just above the card once, and an ejecting pin will come out.

Pushing this pin all the way back in will eject the card.

Secure Storage System (3S)

The Phase One Secure Storage system (3S) provides the industries safest memory card handling ever.

When working with memory cards in a Phase One P-back, you can always be sure that your data is safe.

The 3S technology is automatically checking your cards file structure every time it is inserted to the P-back.

If the disk check function finds errors on the card, it will prevent usage of the card until these are corrected or the card is formatted.

Always format your Memory card in the P-back

In General all CF-cards or micro drives comes pre-formmatted and ready to use in the P-backs.

However to ensure the best performance from these cards it is to be considered best practice to always format them in the P-back.

Please consult the "Format Disk" explanation in chapter 9 of this reference manual on how to format a memory card in the P-back.

Formatting of the memory card is done in either FAT 16 or FAT 32 depending on card size, and if the formatting are done in the P-back cluster sizes on the disk is set for best performance.

It is however also possible to format the cards on either Mac or Windows, this is explained in the following sections of this chapter.

Please note!

Ejecting the card while the P back is still writing to the card (red LED is on) will cause images, that are still not written to the card, to be lost.

Also ejecting the battery while the P back is still writing might result in loss of the data that is not yet written to the memory card.

For rescue tips in situations where the P-back reports that you have a damaged card, please see "Sandisk card and Card reader" section.

General handling guidelines

Especially when using micro drives you have to be careful not to drop them on the ground or even on a table.

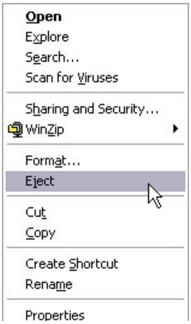
Compact flash cards are quite hard to break physically but keep the card away from moisture and sand and don't bend it. Use the supplied jewel box as a storage container.

Using cards or micro drives in the card reader

When Inserting the card to the card reader on a Mac or PC, the card will be mounted as a drive on the computer.

Windows XP and Mac OS X has the required drivers for the CF-card reader, but Windows 2000 requires you to download and install the driver from www.sandisk.com.

For information on how to import the files to Phase One Capture One, please consult the Capture One online user guide available under "Capture One Help" in the Help Menu.



Mounting and dismounting

On Windows XP and Windows 2000:

To avoid confusing the system or, worst case, end up with a CF-card that was unintentionally erased, it is required to safely eject the card by right clicking the icon in "My Computer" and select the "Eject" option.

On a Mac the card have to be unmounted, by putting it into the trash, or selecting eject (command-e) in the "File" menu , or ejecting from the Capture panel inside the Capture One software.

Just pulling it out, and reinserting it will confuse the system, possibly resulting in uncontrolled read or write errors. If this happens, restarting the computer usually solves the problems.

Preparing the CF-cards or micro drives

Most CF cards or micro drives comes pre formatted, ready to be used in the P back.

The P back supports cards formatted in either FAT 16 or FAT 32.

If your card is not recognized in the P back it is possibly due to a wrong file system formatting on the card.

Mac HFS, UNIX or NTFS file systems are not supported by the P back, and cards with these file systems will not be recognized.

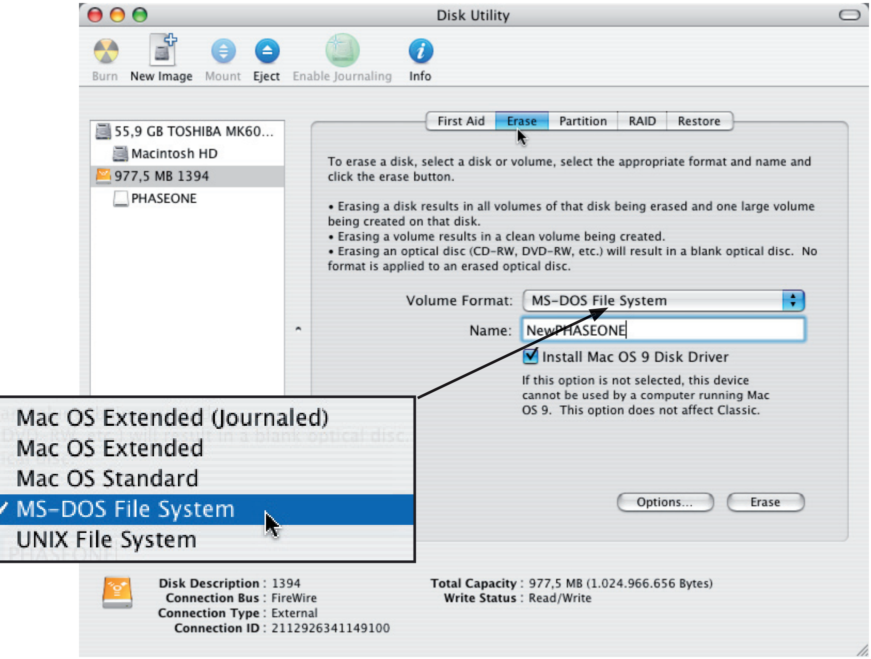
The card will have to be formatted in either FAT 16 or FAT 32 using a computer, Mac OS X or Windows.

Formatting on a Mac OS X computer

Disk Utility

On Mac OS X the formatting cannot be done directly in the finder but is easily done inside the Disk Utility located in the Applications > Utilities folder.

Open the Disk utility and select the Disk (not just the partition, but the entire disk).


Disk Utility
Burn
New Image
Mount
Eject
Enable Journaling
Info
55,9 GB TOSHIBA MK60...
Macintosh HD
977,5 MB 1394
PHASEONE
First Aid
Erase
Partition
RAID
Restore
Mac OS Extended (Journaled)
Mac OS Extended
Mac OS Standard
MS-DOS File System
UNIX File System
Options...
Erase

To erase a disk, select a disk or volume, select the appropriate format and name and click the erase button.

- Erasing a disk results in all volumes of that disk being erased and one large volume being created on that disk.
- Erasing a volume results in a clean volume being created.
- Erasing an optical disc (CD-RW, DVD-RW, etc.) will result in a blank optical disc. No format is applied to an erased optical disc.

Volume Format: MS-DOS File System

Name: NewPHASEONE

☑ Install Mac OS 9 Disk Driver

If this option is not selected, this device cannot be used by a computer running Mac OS 9. This option does not affect Classic.

Disk Description : 1394
Connection Bus : FireWire
Connection Type : External
Connection ID : 2112926341149100

Total Capacity : 977,5 MB (1.024.966.656 Bytes)
Write Status : Read/Write

Select the Erase panel as shown on next page, and select MS-DOS File System. Give the disk a name and click on Erase to erase and format the entire disk for use with the P back.

The formatting done in the P back corresponds to a Quick erase Mac OS X. Choose "Options" in the formatting dialogs to specify a complete formatting of the media resetting all to zeros.

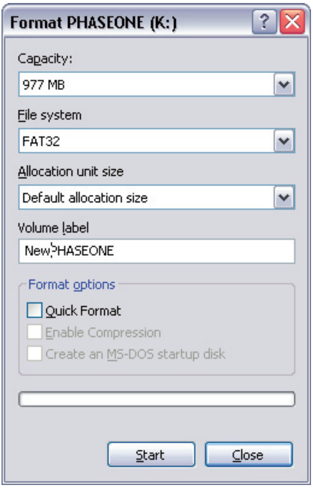
Formatting on a Windows computer

Insert the CF-card in the card reader, and select the drive when it mounts in "My computer" or in the Explorer.

Right click on the drive and select "Format" from the pop-up menu.

Select FAT32 or FAT16 from the "File System" pop-up.

Give the card a name and click Start to format the card to be used with the P back.


Format PHASEONE (K:)

Capacity: 977 MB

File system: FAT32

Allocation unit size: Default allocation size

Volume label: NewPHASEONE

Format options

☐ Quick Format

☐ Enable Compression

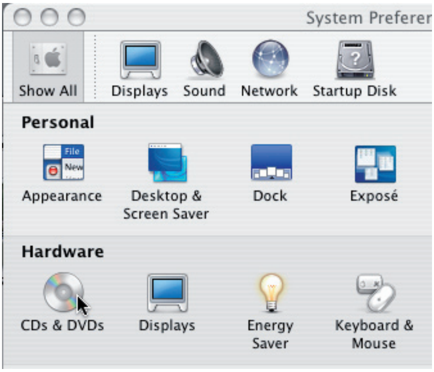
☐ Create an MS-DOS startup disk

Start
Close

The formatting done in the P back corresponds to selecting Quick erase in the options box. To specify a complete formatting of the media resetting all to zeros, do not enable the quick erase option.

Disabling iPhoto Autostart (Mac OS X)

iPhoto Autostart can be disabled in the Mac system preference.


System Preferer
Show All
Displays
Sound
Network
Startup Disk
Personal
Appearance
Desktop & Screen Saver
Dock
Exposé
Hardware
CDs & DVDs
Displays
Energy Saver
Keyboard & Mouse

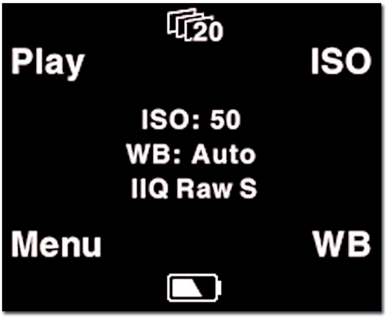
Select "CD's & DVD's" and change the setting for "Picture disk" to either "Ignore" or point it to the Capture One Application you are using.

6. Navigating the P back

When the P back is turned on, the screen will always be in its home display position or "Main screen".

Pressing and holding down the upper left button on the back will also bring you to the Main screen, regardless of where you are in the menu system.

The Main screen has an indicator in the top showing remaining captures, and a battery indicator at the bottom showing the remaining battery capacity.



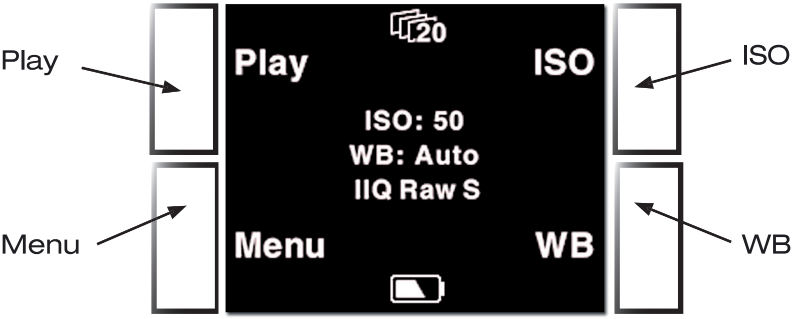
ISO: 50
WB: Auto
IIQ Raw S

When either indicator reaches zero, it will start blinking, to indicate that either storage or battery needs replacement before capturing any more images.

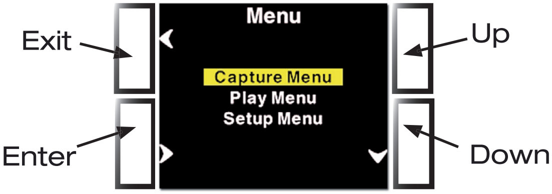
The main screen also shows the current ISO setting, white balance setting and IIQ Raw file format selected.

Menu buttons

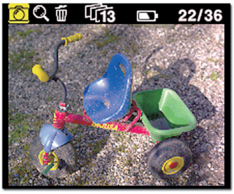
The Phase One P back has four menu buttons to control the menu system on the display.


Play
Menu
20
Play
ISO
ISO: 50
WB: Auto
IIQ Raw S
Menu
WB
ISO
WB

When the P back is in its initial state (just after power up) or at the menu systems "home" position (Main screen), the four buttons each has a shortcut assigned. Play, Menu, ISO and WB.


Exit
Enter
Menu
Capture Menu
Play Menu
Setup Menu
Up
Down

Inside the menu system arrows will indicate the function of the four buttons, the two buttons to the left is used to enter and exit the selected menus, whereas the two to the right is used to go up and down in the menu system.



From the home position, pressing the "Play" button will bring up the image browser, where you can go up and down with the right hand buttons, to browse through images.

Pressing the "Menu"" button will bring you to the menu system where you can scroll up and down in the menu system with the right hand buttons to select the menu options to set.

When the desired option is highlighted it can be selected by pressing the "Enter" button.

Exiting the menus is done with the "Exit" button.

Home shortcut

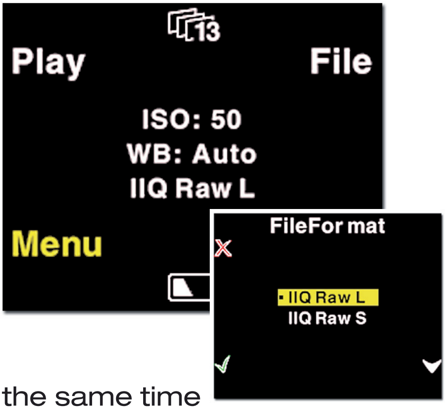
Holding down the "Exit" button for a few seconds will always bring you to the home position or main screen immediately.

ISO and WB

When the display is in its home position the two buttons to the left, ISO and WB brings you directly to the ISO and White balance settings, where you can scroll up and down, and select the setting you want with the "Enter" button.

File format shortcut

Holding down the "Menu" button while in Home position colors the word "Menu" in yellow, and at the same time reveals a shortcut with the word "File" in the place where ISO was.

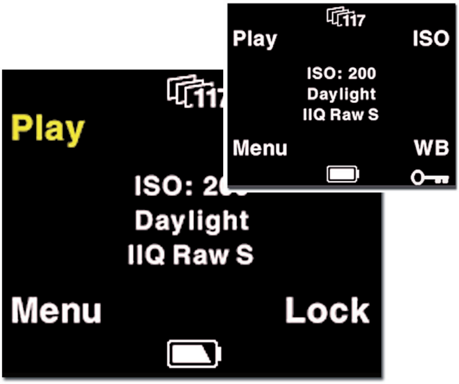


ISO: 50
WB: Auto
IIQ Raw L

Pressing this button at the same time will bring up the File format Menu, where you can select between IIQ Raw L and IIQ Raw S.

For more explanation on selecting in the menus please consult the "Menu mode" section later in this manual.

Button Lock shortcut


117
Play
ISO
ISO: 200
Daylight
IIQ Raw S
Menu
WB
Play
117
ISO: 20
Daylight
IIQ Raw S
Menu
Lock

Holding down the "Play" button while in Home position colors the word "Play" in yellow, and at the same time reveals a shortcut with the word "Lock" in the place where WB was.

Pressing this button twice when holding down the "Play" will lock operation of the four menu buttons. This is usefull to avoid unentended button operation while carrying around the camera,

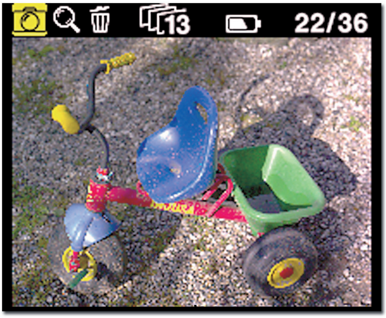
To Unlock the buttons hold down the "Play" button again and tab the "Lock" button twice again.

7. Play mode

"Play mode" can be used to review, zoom and delete images.

From the "Main screen", pressing the top left button the P back is set to Play mode.

In Play mode the top of the screen will show a menu bar. In the right side of the menu bar the current image number and the number of images captured on the media is displayed. In this example it shows number 22 out of 36 images.



Pressing the Up and Down buttons on the P back (right hand side) it is possible browse through the images.

Holding down the "Enter" button while pressing the up and down icon will bring you to the first and last image accordingly.

Battery and number of captures left are also shown in the menu bar.

Pressing the Play button on the P back (top left hand) will step through the options available to the left in the menu bar.

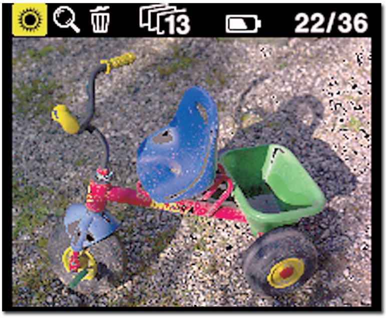
From left to right these are: Review, Zoom and Delete.

Pressing the "Enter" button on the P back (bottom left hand) selects the option.

View modes

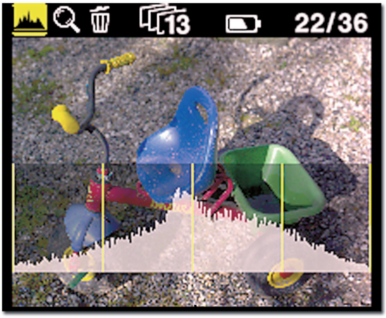
Play mode has four view modes, or review modes; Normal image display, Exposure warning overlay, Histogram overlay or Info overlay.

After entering the Play mode, press the "Enter" button to shift to the view mode you want.

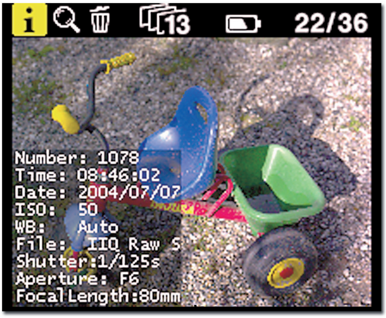


Exposure warning overlay will knock out the highlight areas as a flashing color, to warn about burned out areas in the image.

Overlay Histogram will show a transparent Histogram over the image.



Info overlay will show detailed capture information like capture number, capture time, date, ISO, WB, file format and shutter speed, etc.

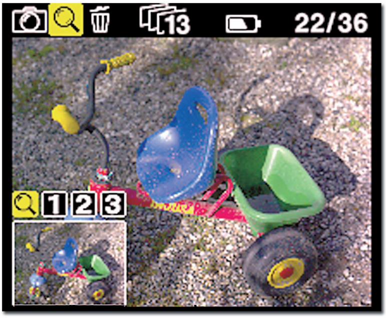


Number: 1078
Time: 08:46:02
Date: 2004/07/07
ISO: 50
WB: Auto
File: IIQ Raw S
Shutter:1/125s
Aperture: F6
Focal Length:80mm

The setting that Play mode is left in will also be the setting used for review of images while shooting.

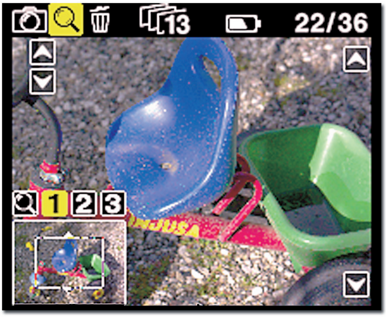
This means, that if the Play mode is set to show images with a histogram, and you then exit to the Main screen. All subsequent captures will be shown on the display with a histogram over the image.

Zoom



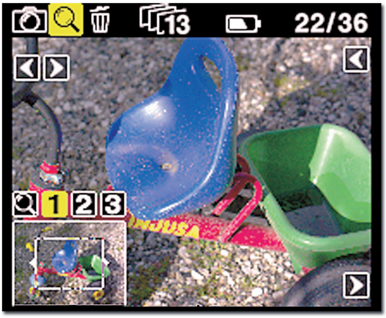
After entering Play mode, advance to the eyeglass icon by pressing the button again and press the "Enter" button to select it.

It is now possible to zoom in the image with the "Enter" button.



The zoom has four steps, Normal, 1, 2 and 3.

When zoomed into 1, 2 or 3 the little view in the lower left corner can be used to navigate around in the image



A small rectangle will show the current position and the up and down buttons can be used to scroll up and down. A small icon just beside the Play button (top left hand) will show the direction of scroll as either vertical or horizontal. Pressing the "Play" button once will change this from horizontal to vertical scroll when using the up and down buttons. (Left side)

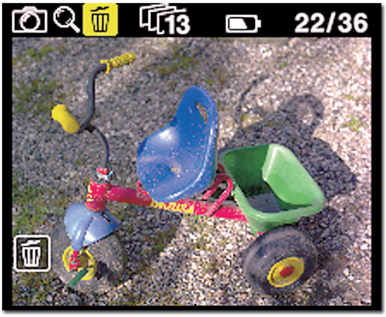
To exit the zoom function use the enter key to navigate to the eyeglass icon in the pan view and press the Play button to step to the next icon in the menu bar. Or hold down the "Exit" button for more than 1 second.

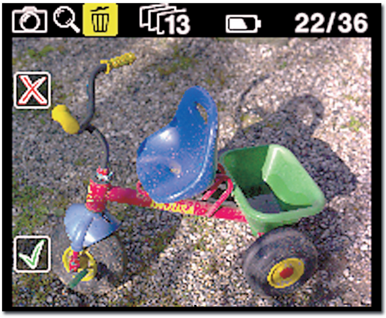
Browsing inside Zoom

While in the Zoom tool (enlargement 1, 2 or 3) holding down the "Enter" key, will hide the two up and down indicators. It is now possible to browse through the images by pressing the Up and Down buttons without leaving the Zoom functions.

This means that the exact same focus point can be evaluated on several pictures in a row by pressing "Enter" - "Up" or "Enter" - "Down".

Delete





Navigate to the delete function by pressing the play button.

When in the delete view press the Up and Down buttons to browse through images.

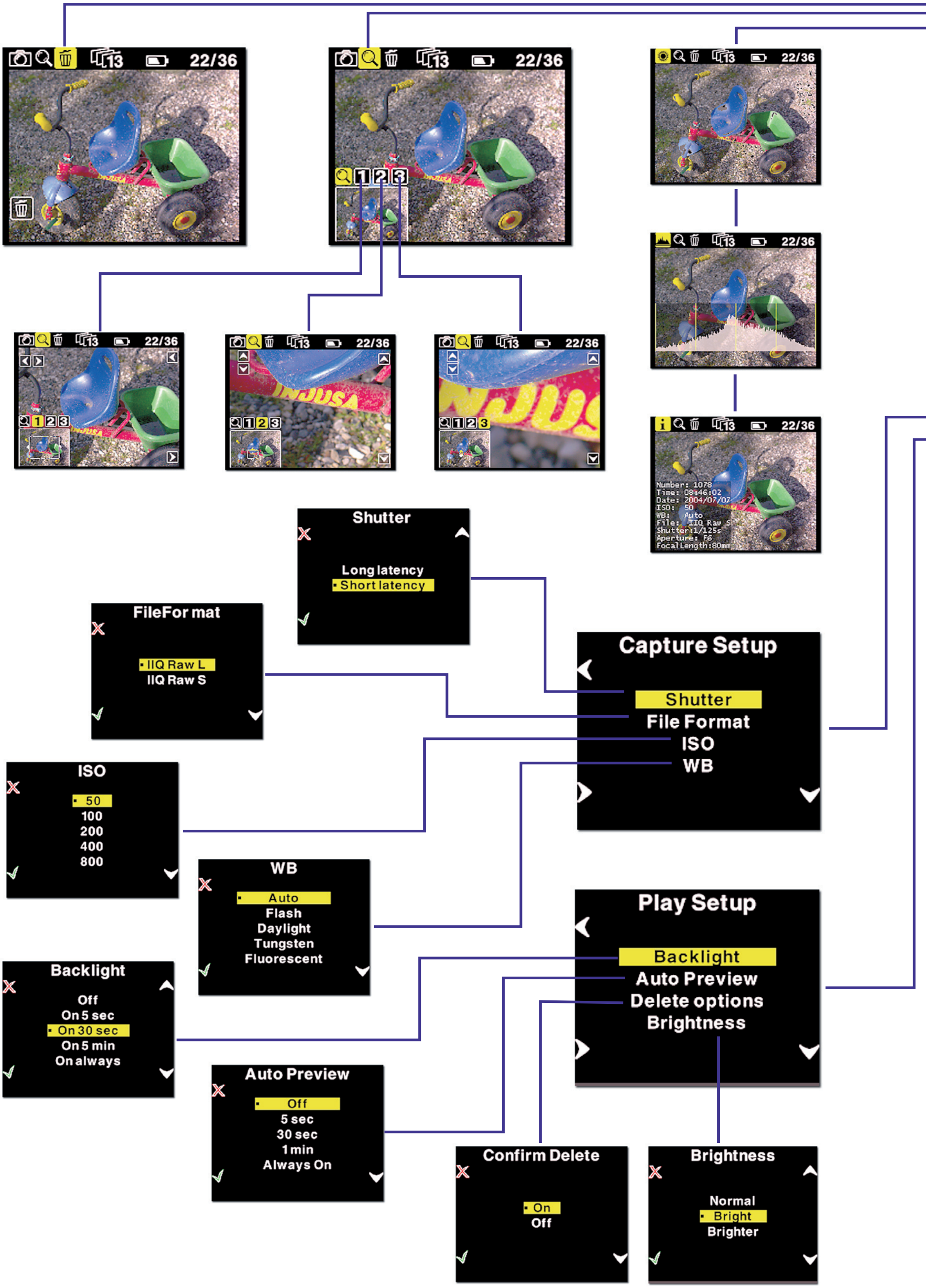
Pressing the Enter button brings up an X or a V. Pressing "Enter" again will select V and delete the image.

Pressing the exit button will cancel the deletion.

If "Confirm Delete " is set to "Off" in the "Play Setup", OK and Cancel will be skipped, and the image deleted immediately when pressing "Enter".

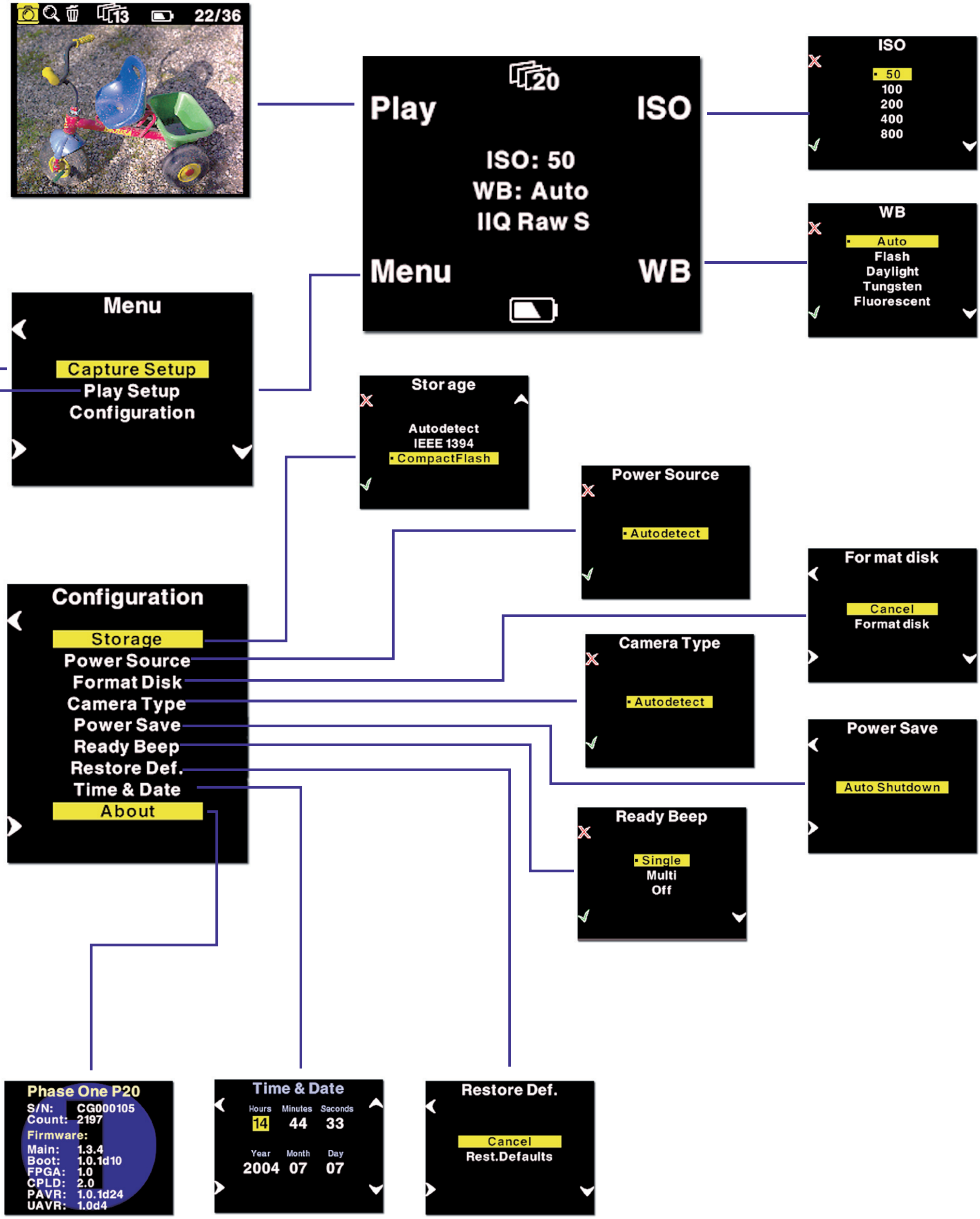
Exit the Play mode

Exit the Play Setup at any time by holding down the Play button for two seconds.


13
22/36
1 2 3
Shutter
Long latency
Short latency
FileFor mat
IIQ Raw L
IIQ Raw S
Capture Setup
Shutter
File Format
ISO
WB
ISO
50
100
200
400
800
WB
Auto
Flash
Daylight
Tungsten
Fluorescent
Play Setup
Backlight
Auto Preview
Delete options
Brightness
Backlight
Off
On 5 sec
On 30 sec
On 5 min
On always
Auto Preview
Off
5 sec
30 sec
1 min
Always On
Confirm Delete
On
Off
Brightness
Normal
Bright
Brighter

Number: 1078
Time: 08:46:02
Date: 2004/07/07
ISO: 50
WB: Auto
File: IIQ Raw S
Shutter:1/125s
Aperture: F6
FocalLength:80mm

8. MENU FLOW CHART

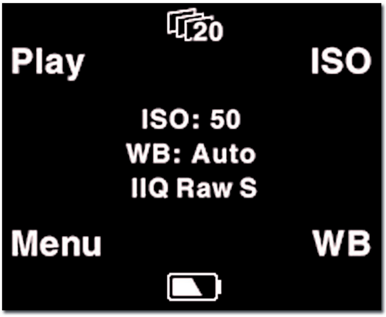

13
22/36
20
Play
ISO
ISO: 50
WB: Auto
IIQ Raw S
Menu
WB
ISO
50
100
200
400
800
WB
Auto
Flash
Daylight
Tungsten
Fluorescent
Menu
Capture Setup
Play Setup
Configuration
Storage
Autodetect
IEEE 1394
CompactFlash
Power Source
Autodetect
Format disk
Cancel
Format disk
Configuration
Storage
Power Source
Format Disk
Camera Type
Power Save
Ready Beep
Restore Def.
Time & Date
About
Camera Type
Autodetect
Power Save
Auto Shutdown
Ready Beep
Single
Multi
Off
Phase One P20
S/N: CG000105
Count: 2197
Firmware:
Main: 1.3.4
Boot: 1.0.1d10
FPGA: 1.0
CPLD: 2.0
PAVR: 1.0.1d24
UAVR: 1.0d4
Time & Date
Hours 14
Minutes 44
Seconds 33
Year 2004
Month 07
Day 07
Restore Def.
Cancel
Rest.Defaults

9. Menu mode

Pressing the lower left button sets the P back in "Menu mode"

Menu mode is where you set up preferences for the P back.

Menus are navigated with the Enter, Exit, Up and Down buttons on the P back.



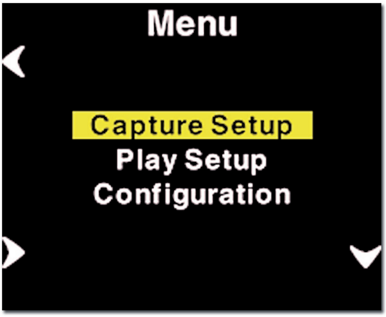
ISO: 50
WB: Auto
IIQ Raw S

Whenever you want to exit the menu mode, hold down the exit button for more than two seconds, and you will be back at the main screen.

When entering the menu mode you have three options: Capture Setup, Play Setup or Configuration.

Capture Setup

Capture Setup is where you setup preferences for the capture.

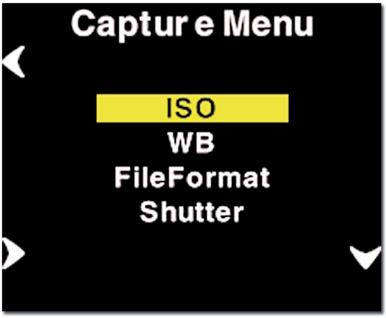


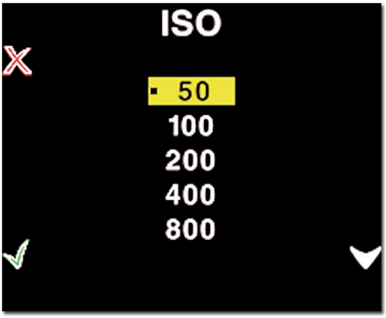
Enter the Capture Setup by pressing the enter button (lower left)

In the Capture Setup you can select ISO, WB, File-Format or Shutter.

by scrolling down with the down button you can select the options.

ISO settings


Captur e Menu
ISO
WB
FileFormat
Shutter

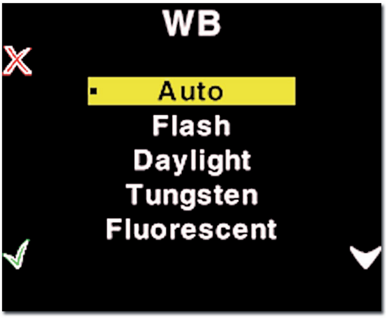

ISO
50
100
200
400
800

In the ISO Settings select from ISO 50 to ISO 800 depending on the conditions you want. In general the higher ISO you shoot at the more noise you will have to cope with in the image. This is also why selecting ISO 800 only can be processed to half resolution in the Capture One application.

When the preferred ISO setting is set press the "Enter" button to confirm the choice (Green check mark).

Or if you regret the choice and just want to go back to the previous setting (the one with the little dot), select the "Exit" button (the red X).

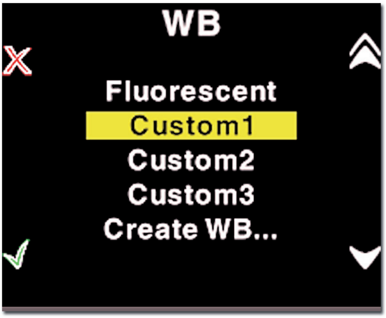
White Balance


WB
Auto
Flash
Daylight
Tungsten
Fluorescent

Setting Auto WB will calculate a white balance based on the information in the image.

If you are using the camera under one of the listed lightning conditions, it might be useful to set it manually to avoid an imprecise white balance which can be a result of the Auto WB option.

Custom White Balance



Your P-back have an option of 3 custom white balances that can easily be defined by point and shoot.

Custom WB is available when pressing the WB button at the main menu.

When scrolling to the bottom of the WB options four options are available:

“Custom1”, “Custom2”, “Custom3” and “CreateWB...”

To make a new custom white balance select CreateWB... and choose which one you want to Create: “Custom1”, “Custom2” or “Custom3”

When one of the options are selected the menu will return to the main menu and the “Make CustomX WB” will be blinking.

Now you are ready to capture the image that should be used for white balancing. Place the viewfinder center circle on an area (gray card or neutral white surface) and capture the image. You have now set the “CustomX” white balance and as you will notice, it is already selected as the current capture white balance.

All subsequent captures will now have the new custom white balance applied.

This way 3 custom white balances can be defined and used as shooting white balances.

Custom white balance from Capture One

You can also choose to easily transfer a white balance from Capture One to the P-back:

1. Create a custom white balance inside Capture One.

2. While tethered to the computer select WB from the lower right button on the P-back.

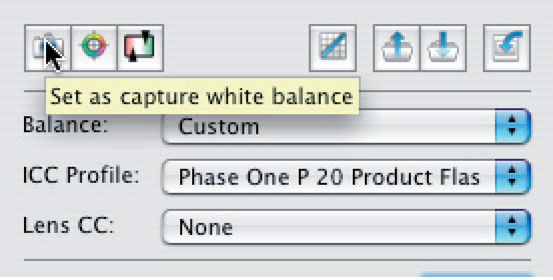
3. Select “Custom1”, “Custom2” or “Custom3” on the P-back depending on where you want to store the new white balance.

4. Finally Click the “Set as capture white balance” button inside capture One.

You will now hear a bib - the custom white balance is now uploaded, selected and ready to use when disconnecting the P-back.

By repeating the above step you are able to bring with you, up to three predefined custom white balances from the studio

Please be aware that when shooting tethered to the computer, white balancing should still be set in the Capture One application and cannot be set on the back while tethered



Balance: Custom

ICC Profile: Phase One P 20 Product Flas

Lens CC: None

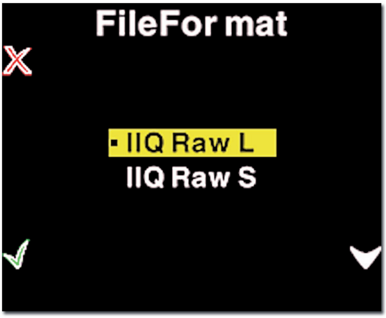
FileFormat

In "FileFormat" you can select two options "IIQ Raw L" and "IIQ Raw S".

"IIQ Raw" is a short term for Intelligent Image Quality Raw.

"IIQ Raw L" is default and is the absolutely loss less capture format of the P back.

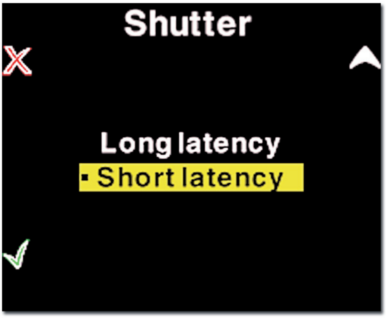
"IIQ Raw S" is a smaller file, and not totally loss less in the format. The "IIQ Raw L" fills up approximately half file size of the processed TIFF file, whereas the "IIQ Raw S" is only approximately one third of the processed TIFF. Yet the "IIQ Raw S" is still maintaining a quality that is hard to visually differ from the "IIQ Raw L".



Shutter

Shutter refers to the shutter of the camera the P back resides on.

Due to the sleeping architecture of the P back, where the CCD is put to sleep to reduce power consumption, the P back needs to wake up before shooting. The timing of this wake up signal is referred to as the latency.



In general, If the camera is used for medium format cameras with digital interface this setting is can be set to either "Short latency" or "Long latency" whichever is preferred.

Short latency has a shorter response time, but is power consuming, so when battery time is an issue you should select "Long latency" on the cost of response time from the camera.

If the P back is used in "two shoot mode" on a large format camera with i.e. a copal shutter or another mechanical shutter where the shutter is released one time for waking up the back, and another time for shooting the image, then the shutter setting in the P back should be set to "long latency".

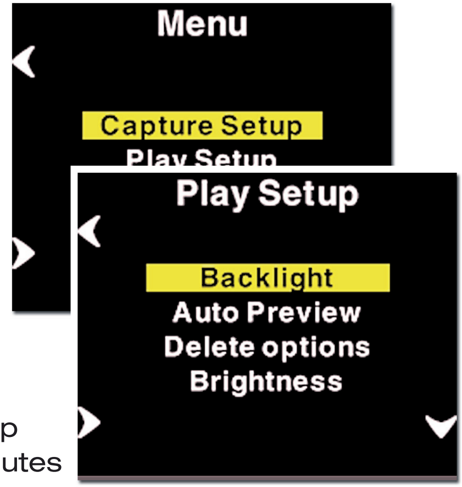
While short latency will respond immediately to triggering the camera, Long latency will not be that fast, but in return you gain much longer battery power.

Please consult the camera specific sections in this manual to learn more about how to use shutter latency with your particular P back setup.

Play Setup

The second option in the menu mode is Play Setup.

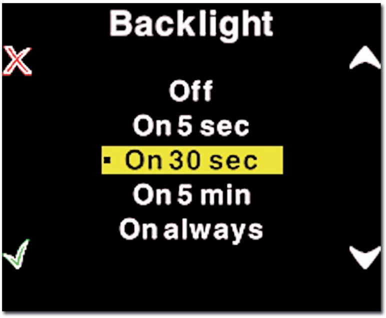
Inside "Play Setup" you can select between "Backlight", "Auto Preview" and "Confirm Delete".


Menu
Capture Setup
Play Setup
Play Setup
Backlight
Auto Preview
Delete options
Brightness

Backlight

In the "Backlight" you setup how many seconds or minutes of inactivity there may be before the light of the display fades.

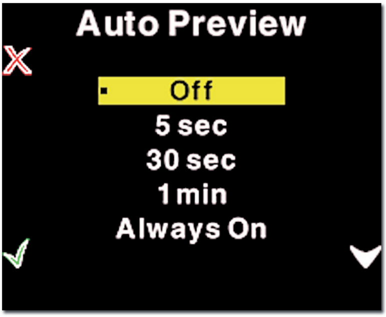
This setting affects the battery life of the P back. The more time before light is dimmed, the faster the battery is used.


Backlight
Off
On 5 sec
On 30 sec
On 5 min
On always

Auto Preview

The second option in "Play Setup" is "Auto Preview". "Auto Preview" refers to the time the image is remains on the screen after capturing an image.

If set to off the preview will not be shown automatically when a capture is taken.

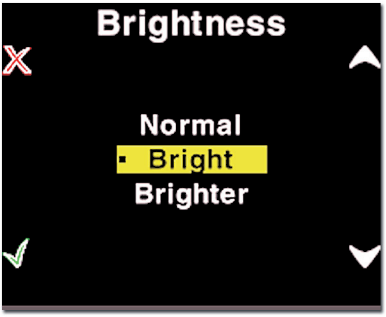

Auto Preview
Off
5 sec
30 sec
1 min
Always On

(Note - If a button is touched during the auto preview period, the preview will remain on and the time-out will be disabled until next capture).

Delete options

In Delete options you can setup whether you want an extra confirmation when you delete images (Default). Or delete images immediately, Or you can disable deleting of images on the P-back to avoid unintended loss of images.

Brightness

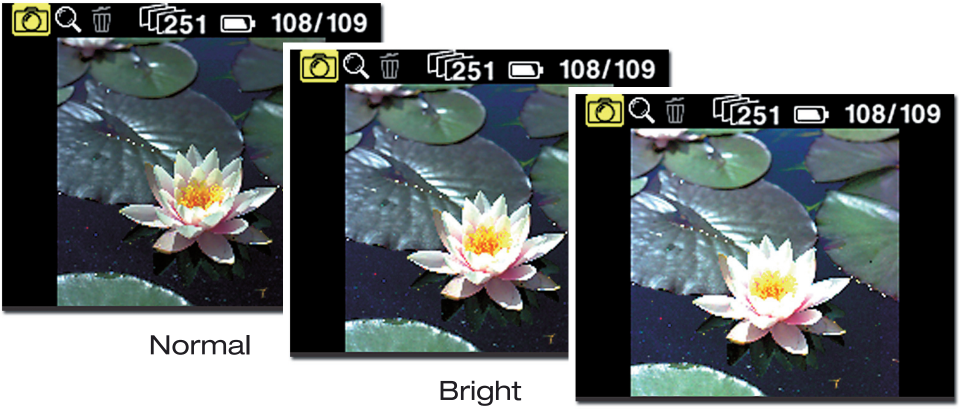

Brightness
Normal
Bright
Brighter

In the Brighness setup, you can set the brightnes of the preview LCD screen

Default setiing is Bright.

Only the Brightness on the display is affected.

Exposure warning, histogram and final capture is not affected by this setting.


251
108/109
251
108/109
251
108/109

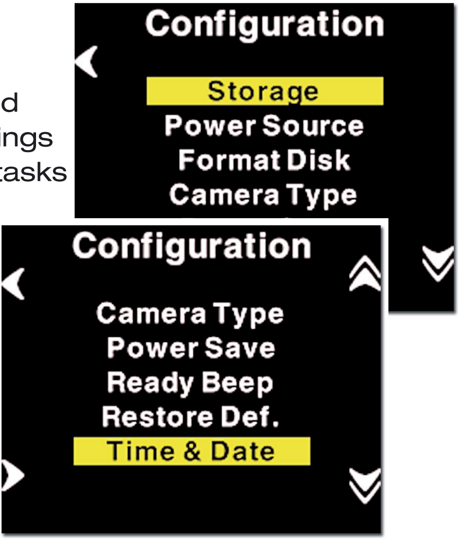
Normal

Bright

Brighter

Especially on low light images, a brighter display is a great help

Configuration

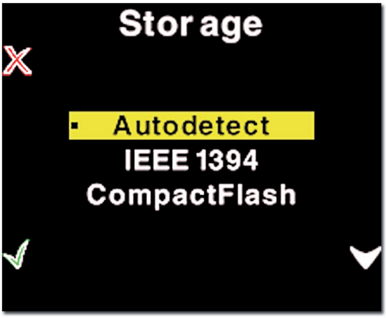

Configuration
Storage
Power Source
Format Disk
Camera Type
Configuration
Camera Type
Power Save
Ready Beep
Restore Def.
Time & Date

"Configuration" is used to setup general settings and perform general tasks on the P back.

"Configuration" contains more menu entries than can be displayed on one screen. This is indicated by a double arrow pointing down in the right side.

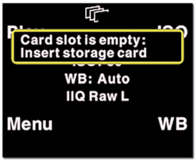
Scrolling past the last menu entry will reveal the next entry. Now the arrow in the top right side will turn into a double arrow, to indicate that there are hidden entries at the top.

Storage


Stor age
Autodetect
IEEE 1394
CompactFlash

"Storage" is per default set to "Autodetect". If a card is inserted in the P back it will automatically capture to this card. If not, it will try to capture via the IEEE 1394/FireWire port directly to the computer.

If the P back is not tethered to a computer you will get an error message that the card slot in the P back is empty.

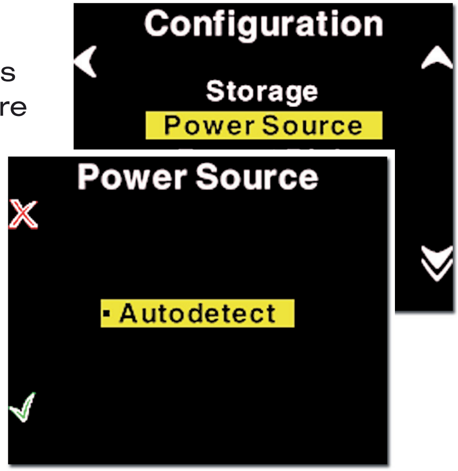


Card slot is empty:
Insert storage card

WB: Auto
IIQ Raw L

The P back can also be forced to shoot to either Compact Flash or IEEE 1394/ FireWire by selecting the options inside "Storage".

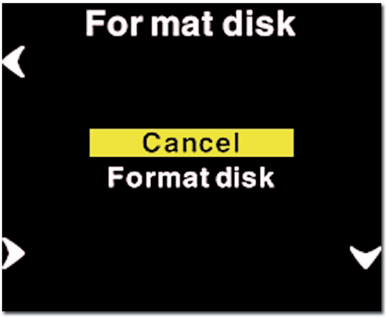
Power Source


Configuration
Storage
Power Source
Power Source
Autodetect

Power source only has one option, and is there only for future features.

The P back will detect if an IEEE 1394/ FireWire connection is supplying power, and automatically shut of the battery power.

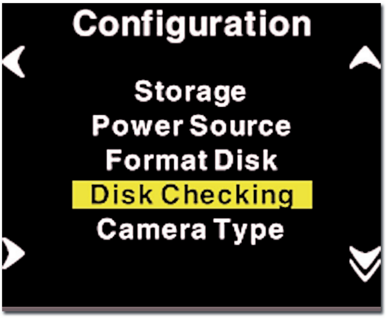
Format disk


For mat disk
Cancel
Format disk

Selecting "Format disk" will erase the CF-card in the P back. The CF-card will be formatted as FAT-32.

Please see CF-card section for troubleshooting if your card is not recognized.

Disk Checking


Configuration
Storage
Power Source
Format Disk
Disk Checking
Camera Type

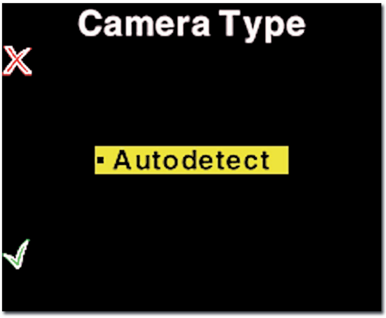
Disk Checking is done per default on every card inserted to the P - back.

If for some reason this check is not wanted the feature can be turned off in this menu.

Phase One recomends leaving diskchecking turned on, to maximize data security on the memory cards.

Read more about the Phase One Secure Storeage system in Chapter 5 of this manual,

Camera type


Camera Type
Autodetect

Camera type currently only have one option since as all supported camera types are autodetected.

Along with the increasing cameras supported, and for custom applications this option will eventuallyget populated.

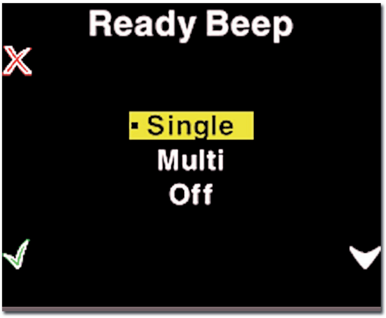
Power Save

Power Save only has one option Auto Shut down.

This is used to set the time of inactivity there can be before the P back Shuts down.

If the P back is automatically shut down it can only be woken up by pressing the "Power" button.

Ready beep



"Ready beep" is the small beep that sounds from the camera after a capture is taken.

The "Ready beep" signals that the capture has been taken, and the P back is ready for next capture.

"Ready beep" can be either "Single", "Multi" or "Off".

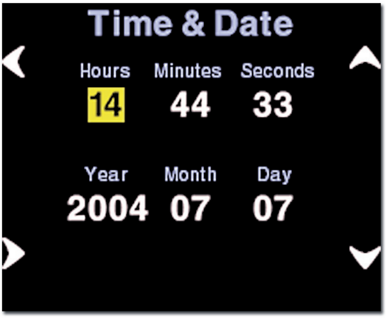
Default this is "Single"

"Multi" is for use in noisy sorroundings, i.e. where it can be difficult to hear if it was the back or the flash that made the ready beep.

Restore def. (Defaults)

Selecting restore defaults will restore the settings of the P back to its default settings. Be careful before using this option as all settings made in the P back will be reset to factory settings.

Time & Date



Time & Date

Hours	Minutes	Seconds
14	44	33

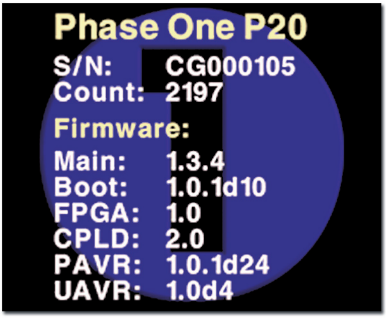
Year	Month	Day
2004	07	07

In "Time & Date" you can set the time and date using the four buttons on the P back. Left side buttons will step through the hours, minutes and seconds field, while the right up and down buttons can be used to set the value of the fields. The time and date is applied to all files captured with the P back.

About

The "About" option in the "Setup Menu" displays technical information about the hardware and embedded software in the camera. This is especially useful if support is needed.

Before contacting your dealer or Phase One Support please make sure to have access to the "About "box or write down the entire contents of the "About" box



Phase One P20

S/N: CG000105
Count: 2197

Firmware:

Main: 1.3.4
Boot: 1.0.1d10
FPGA: 1.0
CPLD: 2.0
PAVR: 1.0.1d24
UAVR: 1.0d4

10. P back - Mamiya 645 AFD

The P back for Mamiya 645AFD is designed for the innovative Mamiya 645 AFD camera. The Mamiya 645 utilizes a hybrid TTL phase-difference-detection type auto focus system. Furthermore the Mamiya 645AFD provides auto exposure settings. The Mamiya 645AFD with a P back encourages all kinds of photographic uses from portraiture and wide-angle photography to high speed shooting and capturing fast action with telephoto lenses.

The functionality of the P back is well integrated with the Mamiya 645AFD camera. The P back communicates with the Mamiya camera through a fast internal electrical computer interface.

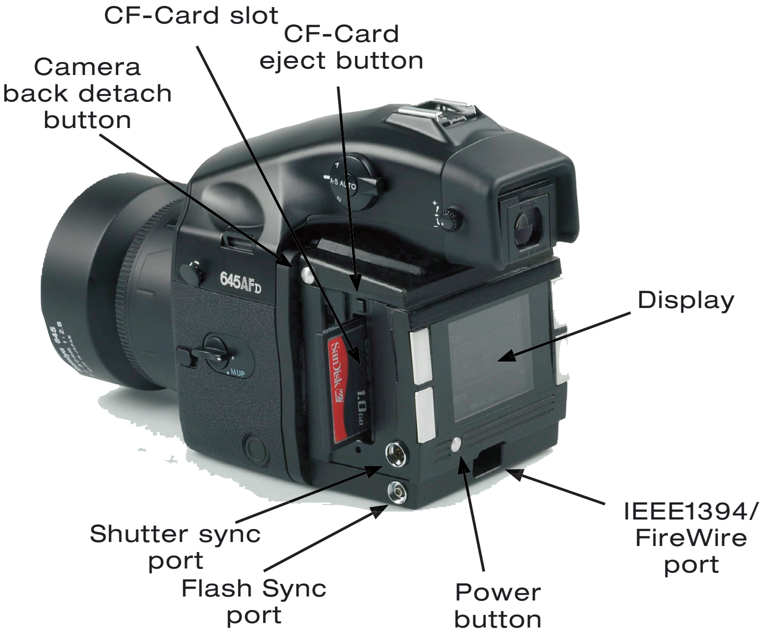
Shutter latency settings

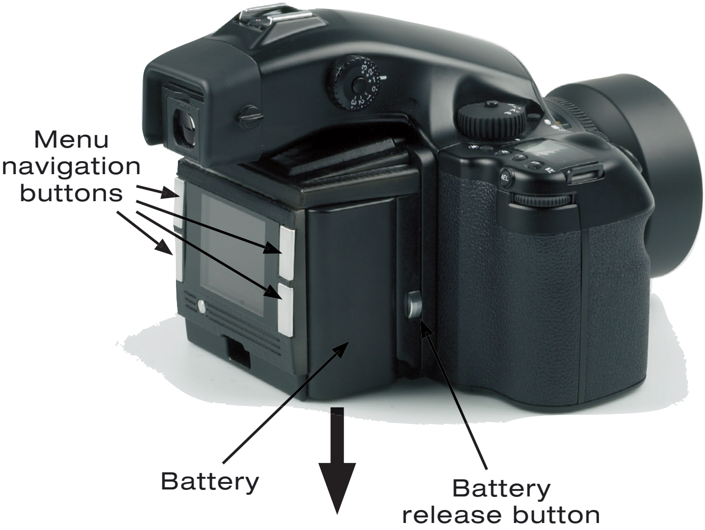
The Mamiya 645 AFD can be used with both Long and short latency.

Default your P back is set to Short latency, which means that the P back will respond fast on triggering on the cost of battery time.

To save battery time you can set the P back to Long latency, and thereby gain extra valuable time before the battery runs dry. This on the cost of response time.

To learn how to setup latency please consult the Menu mode section

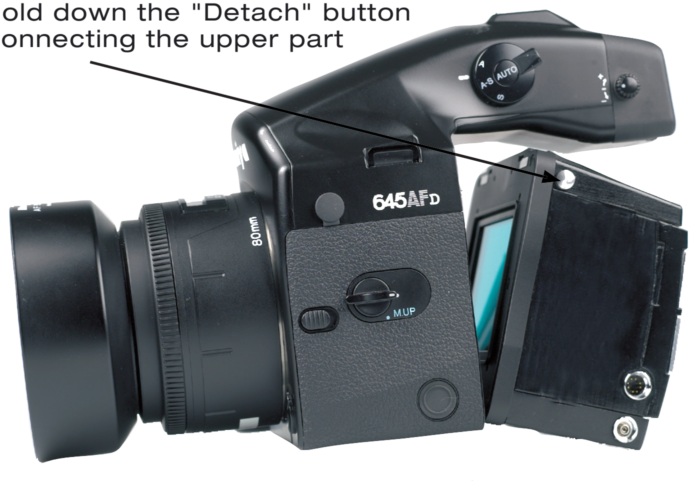

CF-Card slot
CF-Card eject button
Camera back detach button
Display
Shutter sync port
Flash Sync port
Power button
IEEE1394/ FireWire port
645AFD
SanDisk
1.0GB


Menu navigation buttons
Battery
Battery release button

To release the battery press the battery release button and slide the battery down and out of the compartment.

Mounting the P back on the Mamiya 645AFD

The P back is fully integrated with the camera house and acts as a true part of the whole camera system. When no cassette is attached to the Mamiya 645 AFD camera house the mirror is up and the shutter is open. This is the correct position when no film cassette is attached. When attaching the P back to the camera house the shutter will close and the mirror comes down. It is important to ensure that the bottom part of the P back camera back is pressed well into the locking mechanism before the upper locking mechanism is pressed together. Failure to do this can in some circumstances bring the Mamiya camera house in an error state of continuously opening and closing the shutter. In case this error occurs, then simply remove the P back. Please be aware that the shutter should be in the correct starting position (shutter open), if not attach and remove the P back again to make sure that the camera house gets in the correct starting position. (The same procedure is recommended by Mamiya for all film cassettes)



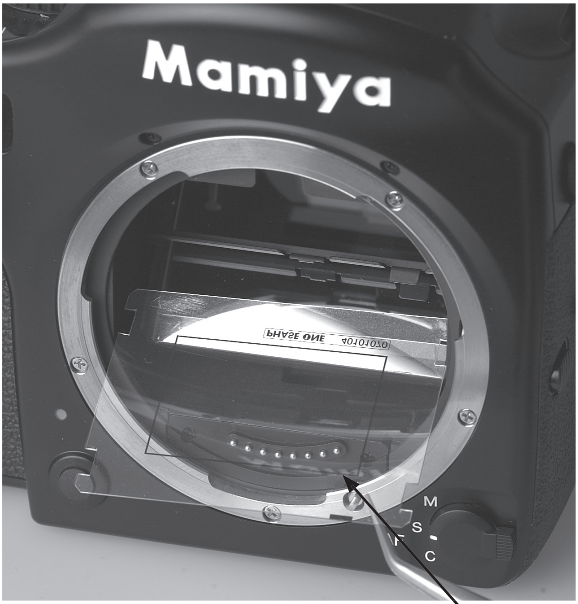
Press and hold down the "Detach" button while connecting the upper part

Place the P back firmly in the bottom locking mechanism

Mounting the Viewfinder Mask

The image area of the Mamiya 645AFD is approximately 5,6 cm x 4.2 cm. The image area of the P back is a little bit smaller (depending on model).

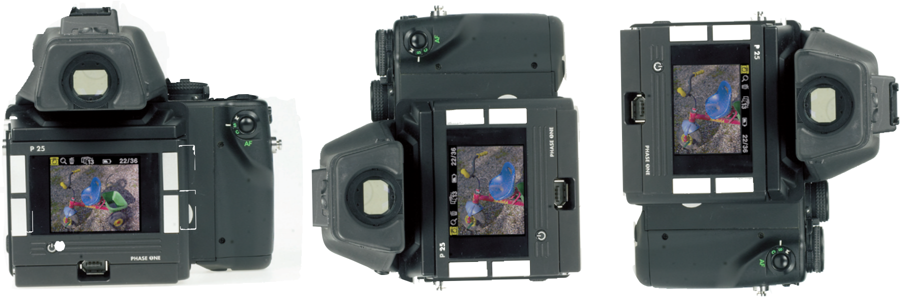
A P back viewfinder mask for the Mamiya 645AFD is provided. This mask has to be mounted beneath the original focusing screen. The viewfinder mask is positioned in the bracket that holds the focusing screen. Please refer to the Mamiya 645 AFD Instructions “Changing the focus screen” before the focus screen is mounted.



The black mark on the mask must point towards the left front corner of the bracket.

Image orientation

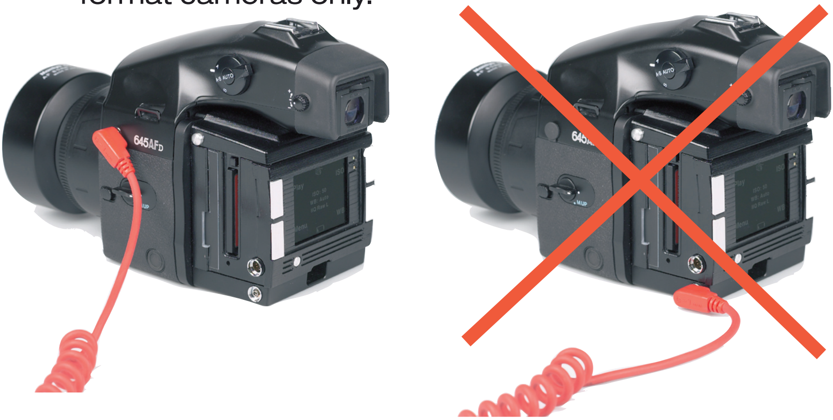
The CCD in P back is positioned in landscape orientation. Whenever an image is captured in portrait position, by rotating the camera, an internal sensor detects this new position and the image will appear as a correctly oriented image on the LCD display and in the Capture One application.



Camera orientation: Images can be captured in all three positions - and will appear with the correct orientation on the LCD or in the Capture One software.

Studio flash sync on the AFD body

When using the P back on a Mamiya AFD body, the flash sync should be connected to the Mamiya body. The flash connector on the P back is for use with large format cameras only.



T-mode on the Mamiya 645AFD

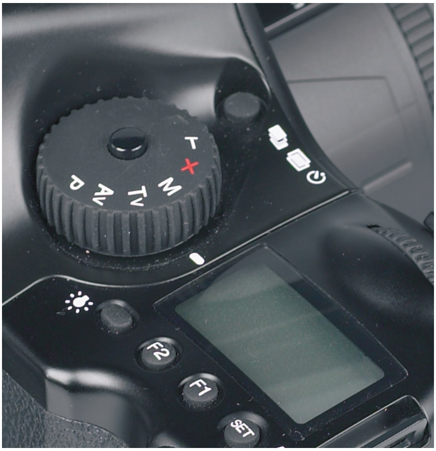
P
Av
Tv
M
T
F2
F1

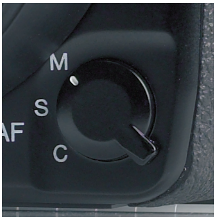
T-mode is not supported for digital backs on the Mamiya 645 AFD. This is usually not a problem as the Mamiya can use exposure times as long as 16 minutes.

Mirror Up

When using the Mamiya 645 AFD the mode selector should be placed in M (Manual mode) and the focus type selector should also be in the M position.

It is not possible for the camera to measure light or focus when the mirror is up.

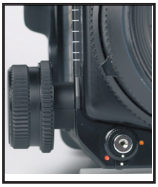




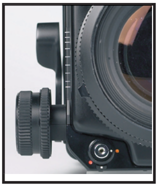
Mamiya RZ67 PRO IID

The P back for Mamiya 645 AFD also supports the Mamiya RZ67 PRO IID via the 645 AFD adaptor plate from Mamiya.

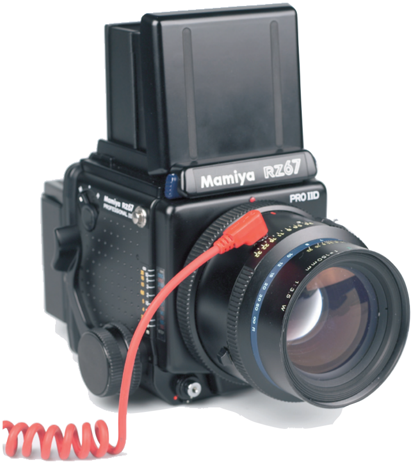
Mamiya RZ67
PROFESSIONAL IID

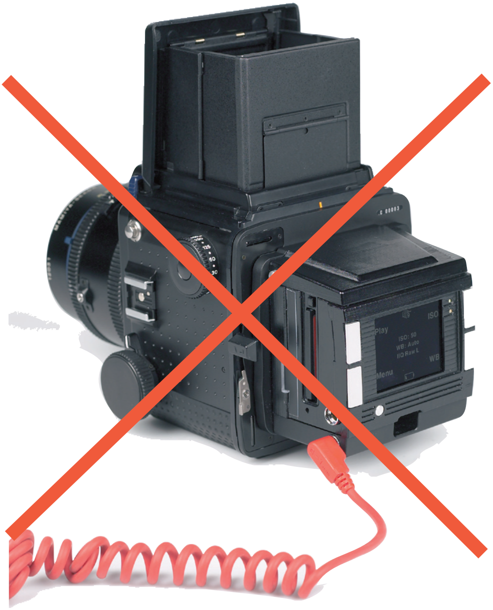


The mode selector on the trigger button should be turned to the white dot when used with the P back.



When the P back is placed on the body and not in use, the selector should be set to the orange dot, to avoid draining the small battery. Even if the P back is turned off, the battery will drain slowly if selector is not at the orange dot.





Studio flash sync on the RZ lens shutter

When using the P back on a Mamiya RZ67 PRO IID, the flash sync should be connected on the Mamiya lens shutter. The flash sync connector on the P back is for use with Large format cameras where no digital interface is available.

Shutter latency settings

The Mamiya RZ PRO IID should be used with Short latency.

Default your P back is set to Short latency, which means that the P back will respond fast on triggering at the cost of battery time.

To learn how to setup latency please consult the Menu mode section

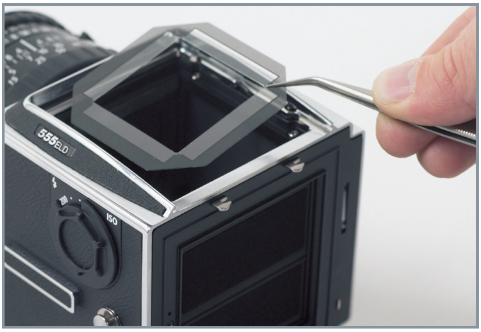
11. P back for Hasselblad V

The Phase One P back can be mounted on a wide range of Hasselblad cameras including Hasselblad 555 ELD, 553 ELX, 501 CM, 503 CW as well as Mamiya RZ67 Pro II and 4” x 5” view cameras via an optional Phase One FlexAdaptor.

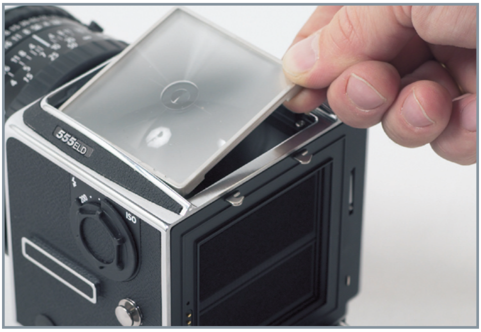
P 25
Play
ISO
ISO: 100
WB: Auto
IIQ Raw L
Menu
WB
PHASE ONE
SanDisk

Mounting the viewfinder mask

The image area of the Hasselblad camera body is approximately 6 cm x 6 cm, whereas the image area of the P back is a lttle bit smaller. Therefore, it is necessary to use the P back viewfinder mask. Remove the protection tape from the mask and mount it beneath the original focusing screen.



The viewfinder mask is positioned in the bracket that holds the focusing screen. Please refer to the Hasselblad camera manual instructions before the focus screen is removed.

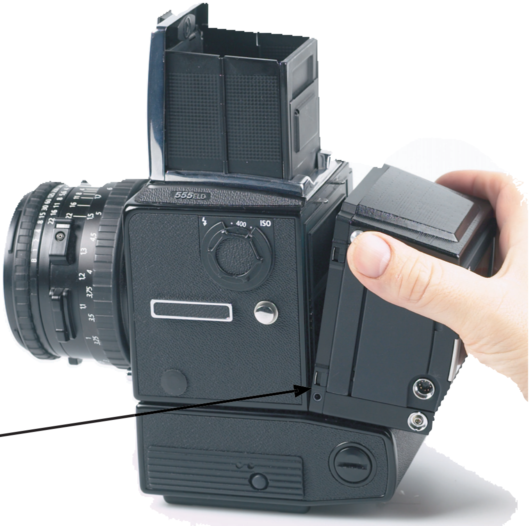


After the Phase One viewfinder mask is positioned in the bracket, place the Hasselblad focusing screen on top of the mask and slide the viewfinder top back into place.

Mounting the P back

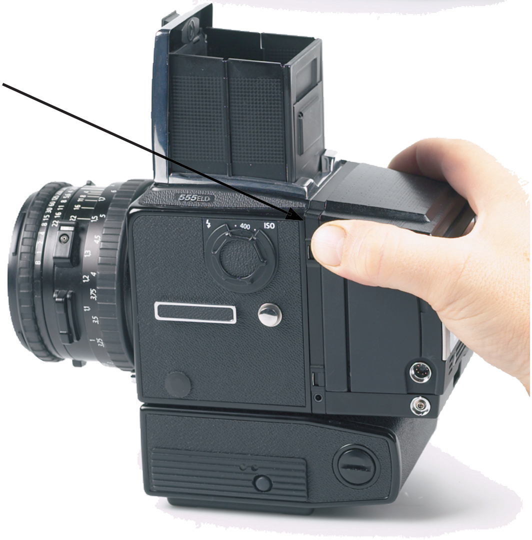
The P back is fully integrated with the camera body and acts as a true part of the whole camera system.

It is important to ensure that the bottom part of the P back camera back is pressed well into the locking mechanism before the upper locking mechanism is pressed together.



1. Place the Bottom of the P back in the locking mechanism.

2. Press the metal button in the top with your thumb and tip the upper end in place.



Mounting the P back vertically

The P back can be rotated to the left and mounted vertically on the Hasselblad body for use in portrait mode.

In this case the lock button on what is now the top should be slided to the left before tipping the P back in place on the body.

Images will be rotated automatically on both the LCD-screen and in the Capture One application.

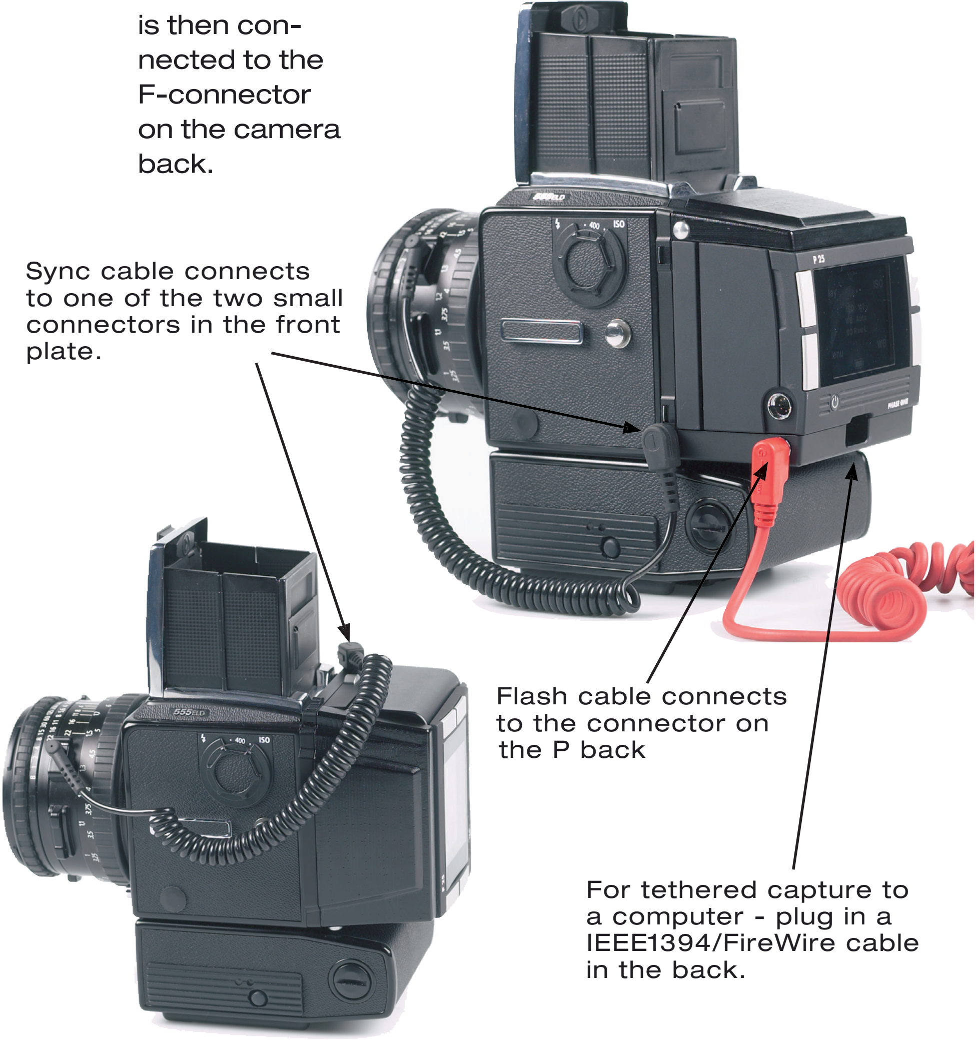
Do not mount while in S or RS modes

Please note that the Phase One P back should not be mounted while the camera is set to mirror up (S or RS modes). Also make sure that the lens is not jammed when connecting the flash sync cable to the Phase One P back.

Camera body specifics

Regardless of which Hasselblad V type camera used, a sync cable is always connected from the lens to the small connector in the front plate on either the left or right side of the P back.

The flash cable is then connected to the F-connector on the camera back.



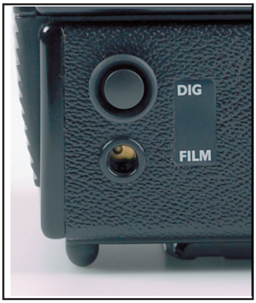
Sync cable connects to one of the two small connectors in the front plate.

Flash cable connects to the connector on the P back

For tethered capture to a computer - plug in a IEEE1394/FireWire cable in the back.

Hasselblad 555 ELD

When using the Phase One P back with a Hasselblad 555 ELD, the shutter release on the front of the Hasselblad must be in the “Digital” position.



If, of any reason, you have to use the shutter release in “Film” position (hardware defect on the DIG button etc.) You must make sure that the Shutter latency is set to ”Short latency” in the P back or in the Capture One application.

Shutter latency settings

On the Hasselblad 555 ELD the P back can be used with both Long and short latency.

All other Hasselblad cameras requires you to set the P back in Short latency.

Default your P back is set to Short latency, which means that the P back will respond fast on triggering on the cost of battery time.

To save battery time you can set the P back to Long latency, and thereby gain extra valuable time before the battery runs dry. This on the cost of response time.

To learn how to setup latency please consult the Menu mode section

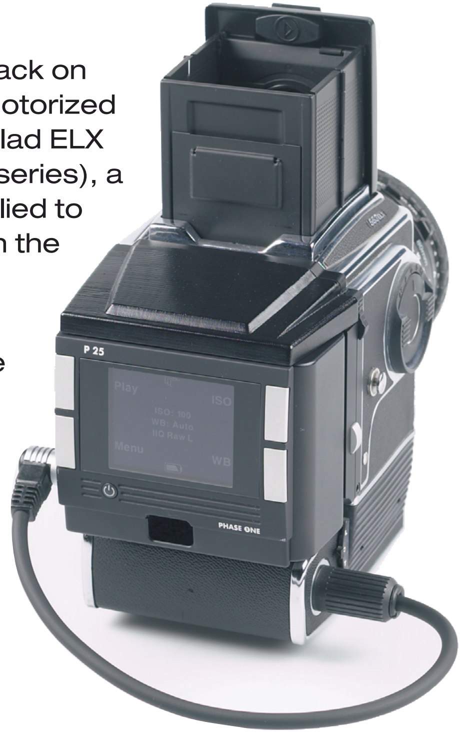
No Motor cable on 555 ELD

A motor cable is not required when using the camera on an Hasselblad 555 ELD body.

Hasselblad 553 ELX

When using the P back on some Hasselblad motorized bodies (i.e. Hasselblad ELX or Hasselblad ELM series), a motor cable is supplied to enable capture from the computer.

The cable is connected between the multi-connector on the P back and the DIN connector on the Hasselblad.



Avoid using A or AS mode.

Please note that the Phase One P back should not be mounted while the camera is set to mirror up (S or RS modes). Also make sure that the lens is not jammed or locked open on the “B” setting when connecting the flash sync cable to the Phase One P back.

While using the Hasselblad 553 ELX you should set the Shutter latency to ”Short latency”

It is possible to use "Long latency" mode on this camera when using a motor cable and only using the capture button inside the Capture One Application.

Hasselblad 501 CM and 503 CW without winder

The Phase One P back also supports mechanical Hasselblad cameras such as the 501 CM and 503 CW. These cameras are operated in single shot mode via the shutter release button or a standard cable release.

Please note that the Phase One P back should not be mounted while the camera is set to mirror up.

Also make sure that the lens is not jammed or locked open on the “B” setting when connecting the flash sync cable to the Phase One P back.

If you are using a mechanical Hasselblad you should normally set the Shutter latency to ”Short latency”

It is possible to use ”Long latency” mode on Mechanical cameras, but precautions must be taken not to trigger too fast.

To ensure capture reliability, we recommend that you look at the green LED on the back of the camera back while you slowly press the mechanical trigger on the camera body.

You can safely press the button all the way in the moment the LED flashes.

”Mirror Up” is not supported when using "Long Latency".

Hasselblad 503 CW with Winder CW

Please note that the Phase One P back should not be mounted while the camera is set to mirror up.

Also make sure that the lens is not jammed or locked open on the “B” setting when connecting the flash sync cable to the Phase One P back.

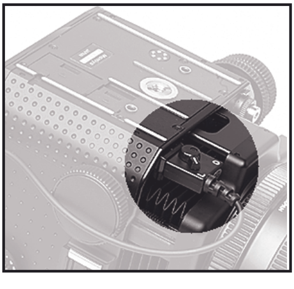
If you are using a 503 CW winder you could set the Shutter latency to ”Short latency”

Mamiya RZ67 Pro II adaptor

Phase One offers an optional P back adaptor plate with Hasselblad mount that enables mounting and close integration with the Mamiya RZ67 Pro II camera.

(Mamiya RZ67 Pro II D can be used with the P back Mamiya 645 AFD)

The camera must be set to multiple exposures when using this adaptor.



The multiple exposure selector (M) is located on the side of the camera body just above the cocking lever with the film back revolve switch (R). Move the selector to the M position.

Mirror up operation is only recommended if using Mamiya’s own double cable release.

The adaptor plate connects to the Mamiya body, and the switch underneath is set to the L position (locked).

If you are using the Mamiya RZ Pro II adaptor you should set the Shutter latency to ”Short latency”

It is possible to use Long latency on this camera, but only when shooting using the capture button inside the Capture One Application.

12. H 101 - P back

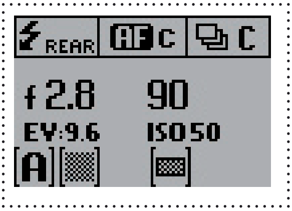
The Phase One H 101 - P back is a single shot digital camera back designed spcifically for the innovative Hasselblad H1 camera. The Hasselblad H1 utilises a hybrid TTL phase-difference-detection type auto-focus system. Furthermore the Hasselblad H1 provides auto exposure settings. The Hasselblad H1 with a Phase One H 101 - P back encourages all kinds of photographic uses from portraiture and wide-angle photography to high speed shooting to capturing fast action with telephoto lenses. This combination is a result of a joint development project between Phase One and Hasselblad.

The functionality of the Phase One H 101 - P back is well integrated with the Hasselblad H1 camera. The H 101 - P back camera back communicates with the H1 camera through a fast internal electrical computer interface.

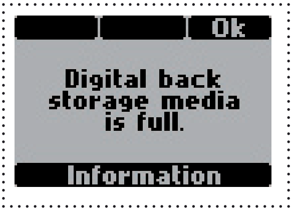
Camera LCD display

The Hasselblad H1 incorporates a display which displays information of the actual condition of the camera. It shows flash method, lens use, trigger setting, f-stop value, exposure time etc.

The Hasselblad H 1 will also display some camera back specific conditions in this display.



Camera back ISO setting is displayed. ISO 50, 100, 200 or 400, 800 can be set on the camera back or in the Capture One Application if shooting tethered.

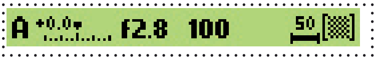


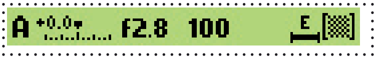
Digital back
storage media
is full.

Error messages like ”Storage media full” will also be displayed.

Viewfinder information

The icon on the second position from the right shows the actual captures left on the storage media, an ”E” indicates that storage media is full, and you will need to free some space or replace it before continuing.





For a general description of the viewfinder information please consult the Hasselblad H1 User Manual.

Auto exposure

The Hasselblad H1 can work in different auto exposure modes. This is fully supported by the H 101 - P back, which communicates the equivalent film speed of the digital back to the Hasselblad H1 camera.

The default film speed of the H 101 - P back is ISO 50. However, this setting can be changed to 100, 200, 400 or 800 ISO, please consult chapter 9 of this manual for details on setting the ISO in your camera back.

Double exposure protection

When using the Hasselblad H1 with a H 101 - P back it is not possible to accidently double expose the image by capturing one image quickly after another. The H 101 - P back communication with the Hasselblad disables the capture functionality in the camera if necessary.

At the end of an image exposure the image information in the CCD has to be moved from the CCD to the processing system. During this short period of time the CCD must be protected from light exposure. The H 101 - P back ensures a safe emptying of the CCD by ignoring the shutter release from the Hasselblad camera.

Image orientation detection

The H 101 - P back CCD is positioned in landscape orientation. Whenever an image is captured in portrait position by rotating the camera, an internal sensor detects this new position and the image will appear correctly oriented on the LCD and in the Capture One application.

Camera orientation:
Images can be captured in all three positions - and will appear with the correct orientation on the LCD and in the Capture One software.

IR filter on the CCD

The IR filter is placed on top of the CCD.

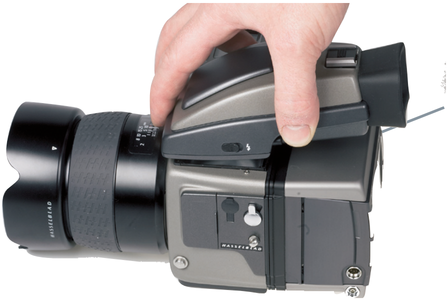
The filter may not be removed for several reasons.

- The focusing of the H 101 - P back camera back will be damaged
- It is only possible to remount the filter without dust in between the filter and the CCD if you have access to special clean room facilities.
- The Phase One Product Warranty is terminated.

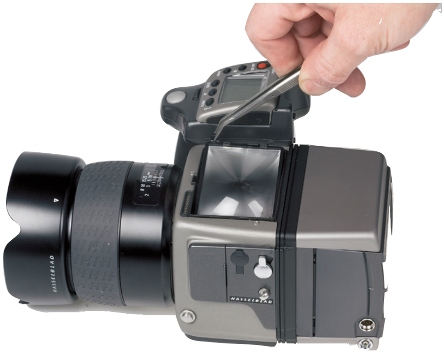
Mounting the viewfinder mask

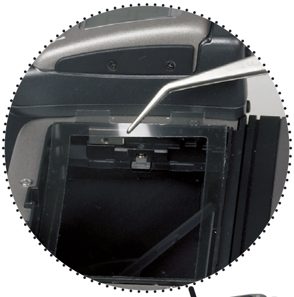
The image area of the Hasselblad H1 is approximately 60 x 45 mm. The image area of the H 101 - P back is a bit smaller (depending on model).

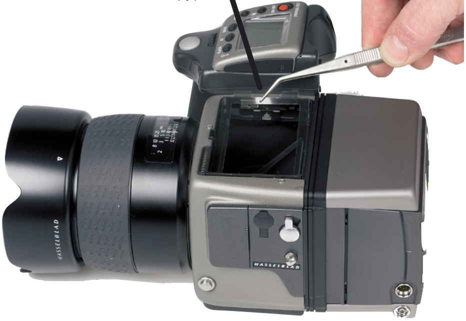
A H 101 - P back viewfinder mask is provided. This mask has to be mounted underneath the original focusing screen. The viewfinder mask is positioned in the bracket that holds the focusing screen.



To get to the viewfinder mask press the small black button placed in the left corner of the viewfinder top.







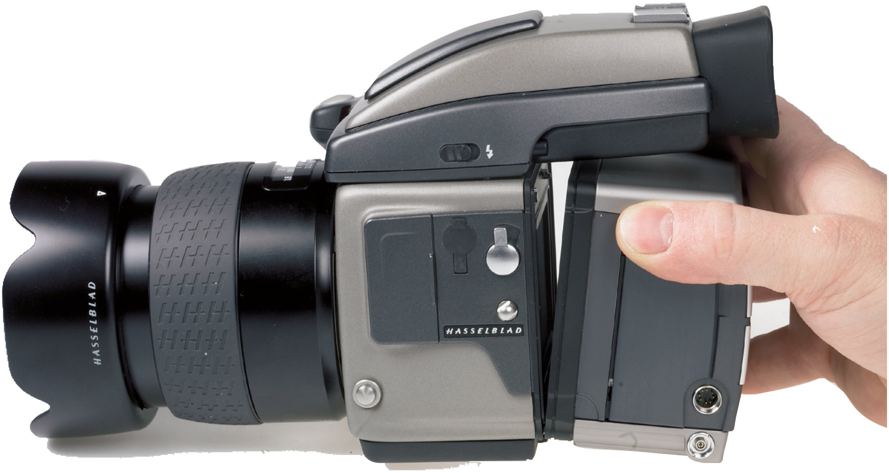
Lift the mask up by pulling the small tap in the upper right corner as shown above. Remove the protecting tape from the Phase One viewfinder mask. Place it in the bay and reinsert the Hasselblad Viewfinder on top of it.

Mounting the H 101 - P back on the Hasselblad H 1

The H 101 - P back integrates fully with the H1 camera house and acts as a part of the whole camera system.

When no cassette is attached to the Hasselblad camera house, the mirror is up and the shutter is open. This is the correct position, when no film cassette is attached.

When attaching the H 101 - P back to the camera house, the shutter will close and the mirror comes down.



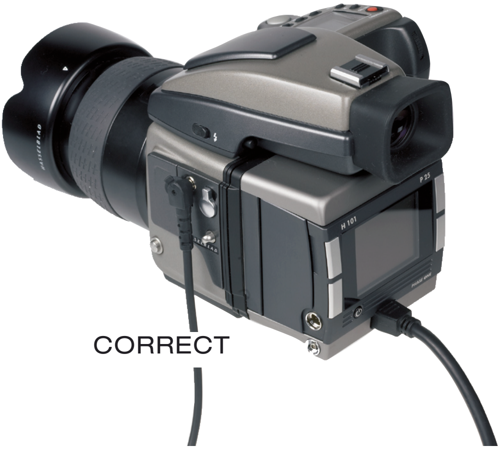
It is important to ensure that the bottom part of the H 101 - P back camera back is pressed well into the locking mechanism before the upper locking mechanism is pressed together.

Use of cables

No cables are required between the H 101 - P back and the Hasselblad H1 .

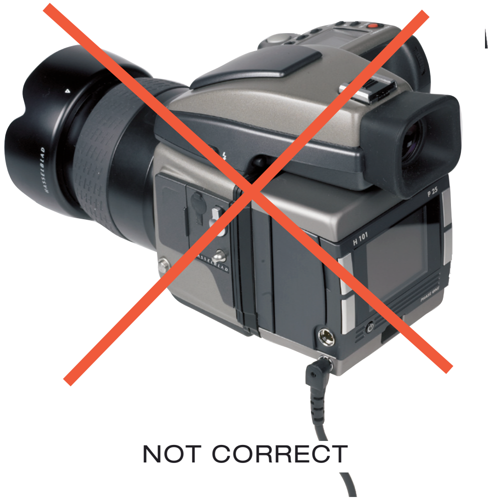
Flash sync cable must be connected to the Hasselblad H1 camera house.

The flash sync cable must NOT be connected to the camera back when used on a Hasselblad H 1.



CORRECT

The flash sync connector on the Camera back is only intended for use with a Phase One FlexAdaptor, or other large format adaptors.



NOT CORRECT

13. P back for CONTAX 645

The CONTAX 645 utilizes a TTL phase difference detection type auto focus system. Furthermore the CONTAX 645 provides auto exposure settings. The CONTAX 645 with a P back encourages all kinds of photographic uses from portraiture and wide-angle photography to high speed shooting to capture fast action with telephoto lenses.

The functionality of the P back is well integrated with the CONTAX 645 camera. The P back communicates with the CONTAX camera through a fast internal electrical computer interface.

This exciting P-back solution is a result of a development project fully supported by Kyocera.

Auto exposure

The CONTAX 645 can work in different auto exposure modes. This is fully supported by the P back, which communicates the equivalent film speed of the digital back to the CONTAX 645 camera.

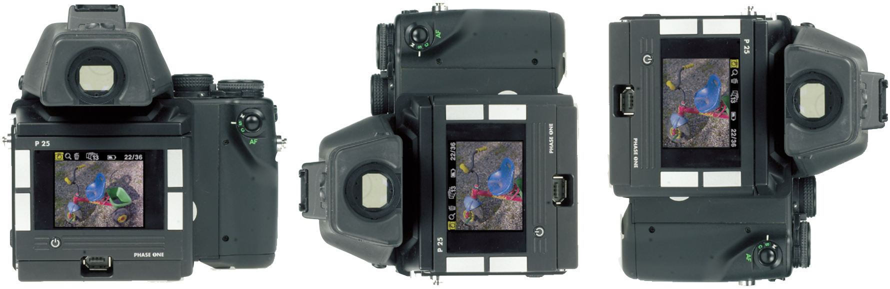
When capturing with auto exposure modes, exposure times between 1/4000 sec. and 32 sec. can be obtained. Please note that images captured with exposure times longer than 60 sec. can be degraded because of increased digital noise also depending on the ISO setting. The auto exposure of the CONTAX 645 camera uses the ISO value set in the P back, or when shooting tethered, in the Capture One application. The ISO can be set to 50, 100, 200 400 or even 800.

Double exposure protection

With the P - back for Contax it is not possible to accidently double expose the image by capturing one image quickly after another e.g. when using continuos capture mode. The P back communication with the CONTAX 645 is disabling capture functionality in the camera when necessary.

Image orientation detection

The CCD in P back is positioned in landscape orientation. Whenever an image is captured in portrait position by rotating the camera, an internal sensor detects this new position and the image will appear with the correct orientation in the Capture One application.



Camera orientation:
Images can be captured in all three positions - and will appear with the correct orientation on the LCD and in the Capture One software.

IR filter on the CCD

The IR filter (Phase One TG1 Infrared cut-off filter) is placed on top of the CCD.

The filter may not be removed for several reasons.

- The focusing of the P back will be damaged.

- It is only possible to remount the filter without dust in between the filter and the CCD if you have access to special clean room facilities.

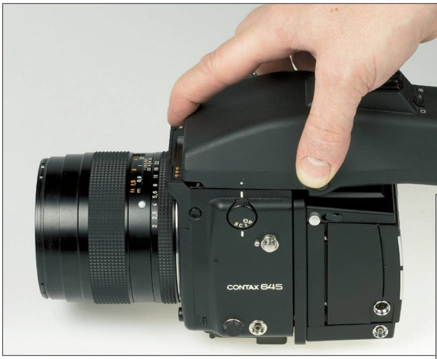
- The Phase One Product Warranty is terminated.

Mounting the focusing screen

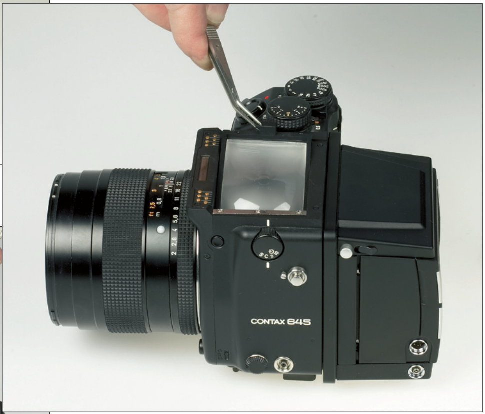
The image area of the CONTAX 645 is 41.5mm x 56mm. The image area of the P back is slightly smaller (depending on model).

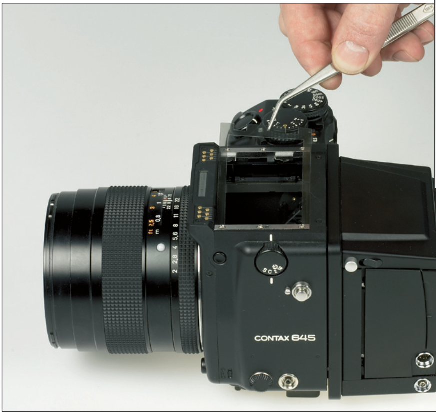
A Phase One P back viewfinder mask is provided.

This viewfinder mask has to be mounted underneath the CONTAX focusing screen. Refer to the CONTAX 645 Instruction Manual “Replacing Focusing Screen” before the focusing screen is mounted.



Slide the VIewfinder back to remove it and pull up the CONTAX Viewfinder glass.



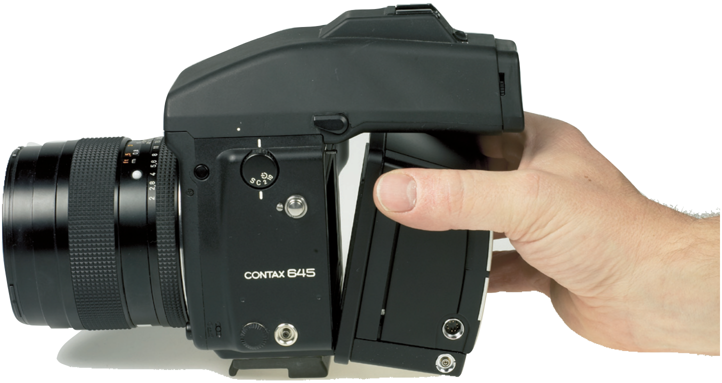


Insert the Phase One Viewfinder mask and re-insert the CONTAX viewfinder glass on top.

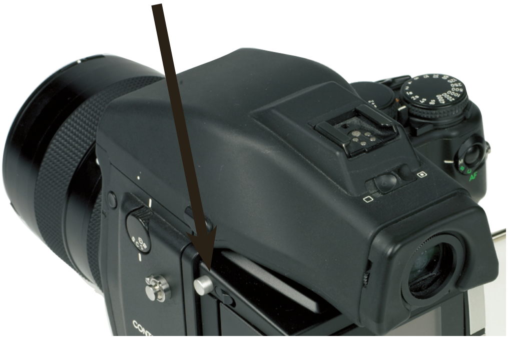
Mounting the P back to the CONTAX 645

The P - back for Contax is fully integrated with the camera house and acts as a true part of the whole camera system.

When attaching the P back to the camera house it is important to ensure that the bottom part of the P back is pressed well into the locking mechanism before the upper locking mechanism is pressed together.



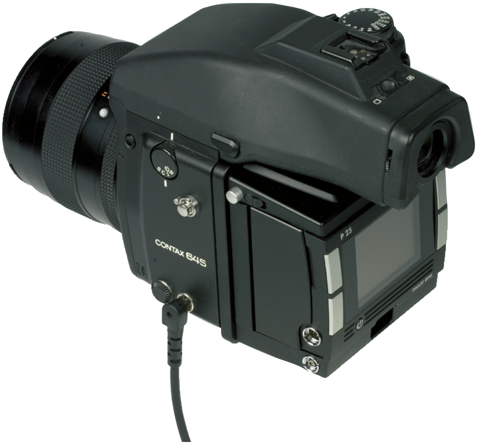
To avoid that the P back is released by mistake from the camera house, the lock button on the side of the P back can be used to lock the C645 locking mechanism.



Use of flash sync cable

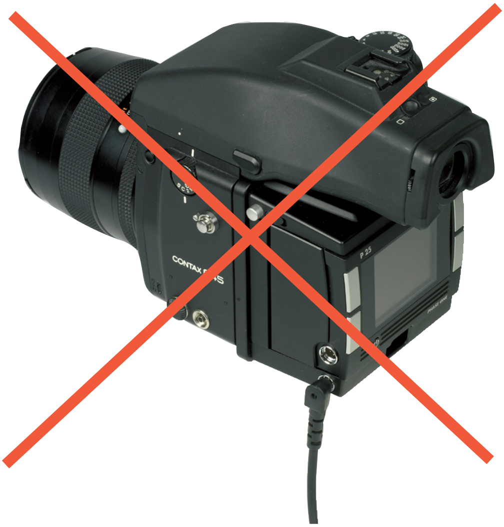
No cables are required between the P back and the CONTAX 645.

Flash sync cable must be connected to the CONTAX 645 camera house.



The flash sync cable must NOT be connected to the P back.

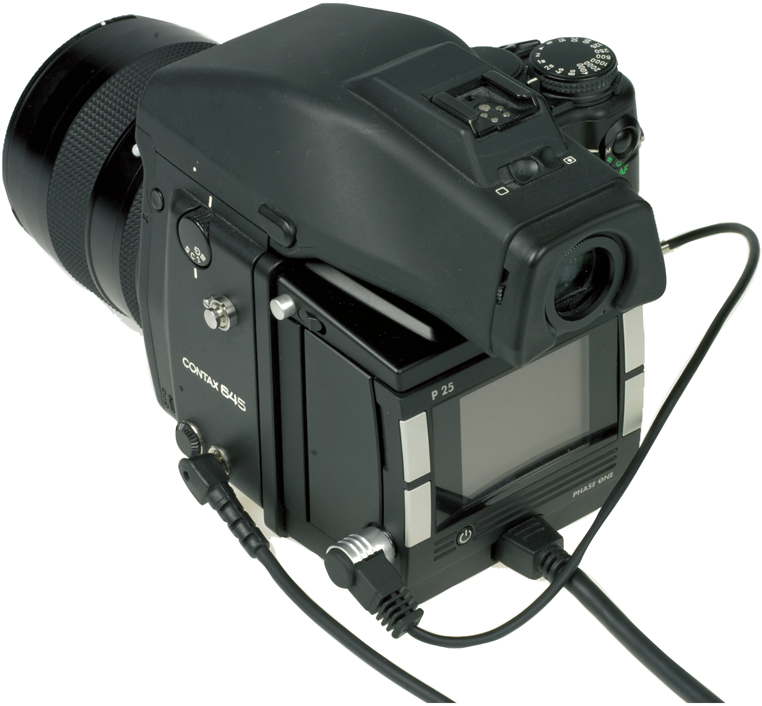
This connecter is only to be used when operated on a Large format camera with the Phase One FlexAdaptor.



Operating the camera from the host computer

The supplied release cable must be connected between the multiple pin connector on the P back and the mini-jack connector placed at the bottom of the handgrip on the CONTAX camera house.

Bulb capture is not supported on Contax



TTL flash

Because the CCD element reflects light different than film, and this cannot be communicated to the Contax. Using TTL flash with the CONTAX 645 camera and the P back, will result in a 2 f-stop overexposure. When using TTL flash, the exposure compensation on the flash unit must therefore be set to –2 f stops.

15. Large format photography

The Phase One P back can be used on most large format cameras via the optional Phase One FlexAdaptor and the enclosed lens sync cable (value added package only). The P back supports most mechanical shutters and the Horseman ISS electronic shutter. To ensure optimal image quality, Phase One strongly recommends shutters that can be fired twice within four seconds. The first release of the shutter activates the CCD, the second release takes the picture. If the time limit of four seconds is exceeded, the camera gives a warning “beep” followed by a “ready” signal. If for some reason it is not possible to fire the shutter twice within the time limit, the camera will send a time-out error message to the screen.

Multi connector sync cable
Part # 50300143

LightPhase FlexAdaptor for 4" × 5" Cameras
P 25
PHASE ONE
PHASE ONE

The Phase One FlexAdaptor

Shutter latency settings

On a Phase One FlexAdaptor the P back can be used with both Long and short latency.

Default your P back is set to Short latency, which means that the P back will respond fast on triggering on the cost of battery time.

This setting can be used with the Kapture Group Two shoot adaptor.

If using the P back as a manual two shooter, where the first shot will power up the P back, and the second will make the exposure, you should use "Long latency".

To learn how to setup latency please consult the Menu mode section.

16. Lens Cast

What is Lens Cast?

Lens cast may occur if using the camera back with wide- angle lenses e.g. Horseman Digiflex II, Hasselblad Flexbody or Hasselblad 905SWC or on other large format cameras with different tilt or swing settings. On a medium format camera lens cast is very rare if using fixed lenses from 60 mm to 120 mm.

Why does it occur?

Lens cast occurs as a result of the angle at which the CCD is exposed to light. If the CCD is exposed to light coming from a very sharp angle e.g. wide-angle or extreme degrees of tilting you may experience lens cast.

What does it look like?

Depending on the light conditions and photographic setup, lens cast will typically appear as a green cast in one corner of the image that changes into a magenta cast in the opposite corner of the image. It’s often visible on neutral grey backgrounds.

How do i get rid of it?

If working with large format cameras with tilt and swing, you would have to make a new calibration file if you change the tilt and swing position. Phase One provides a solution in the Capture one software that helps you get rid of the lens cast. We call it: Lens Cast

Calibration (LCC). By holding an opal white plate in front of the lens and capturing a calibration image that you then apply to all of your capture files you are able to remove the lens cast.

On medium format cameras the calibration is very simple: You do one calibration for each lens and then save the calibration files and apply them when needed by clicking “Set as default for new Captures”.

4 Simple steps to calibrate on fixed lenses (Mac)

(no zoom, tilt or swing).

1. Hold the calibration plate in front of the fixed lens (as close as possible), and capture. In order to ensure correct exposure you may have to open up a few f-stops or in a very dark setup, put on more light directly onto the plate.

2. In the Capture One software you select the ‘calibration’ image and click on the “Save LCC” button

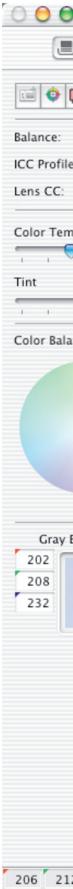
(the LCC tool is located under the grey balance tab).

3. Give the calibration file a name that corresponds to the lens in use or the set-up (e.g. 45mmDaylight)

4. Select the calibration file: “45mmDaylight” from the “Lens CC” drop-down list and click “Set as default for new Captures”.

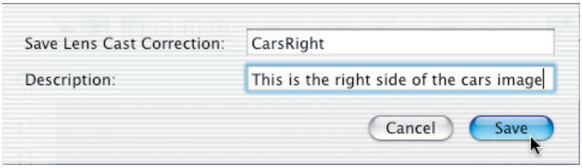
Large format and stitched images (Mac)

When using LCC in combination with large format capture and image stitching you must capture one calibration file per image and make sure that you match the calibration file to the right image prior to stitching.



1. Start by capturing the two calibration files and the two image files.

2. Save the right-side calibration file by clicking the “Save LCC”



Save Lens Cast Correction: CarsRight

Description: This is the right side of the cars image

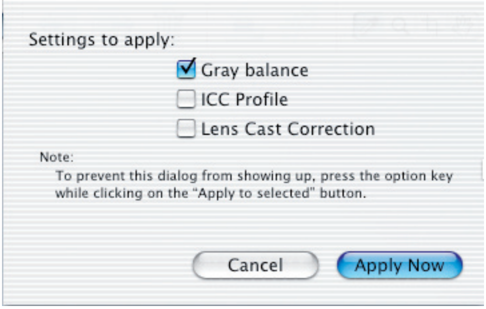
3. Name the calibration file i.e.CarsRight.

4. Save the left-side calibration file the same way.

5. Select the right-side image and apply the right-side calibration file. Select the left-side image and apply the left-side calibration file.

6. A simple way to gray calibrate is to select all images in the thumbnail window. Click on the left-side center of the right side calibration file and apply that gray balance to all images by clicking the “Apply to all selected”

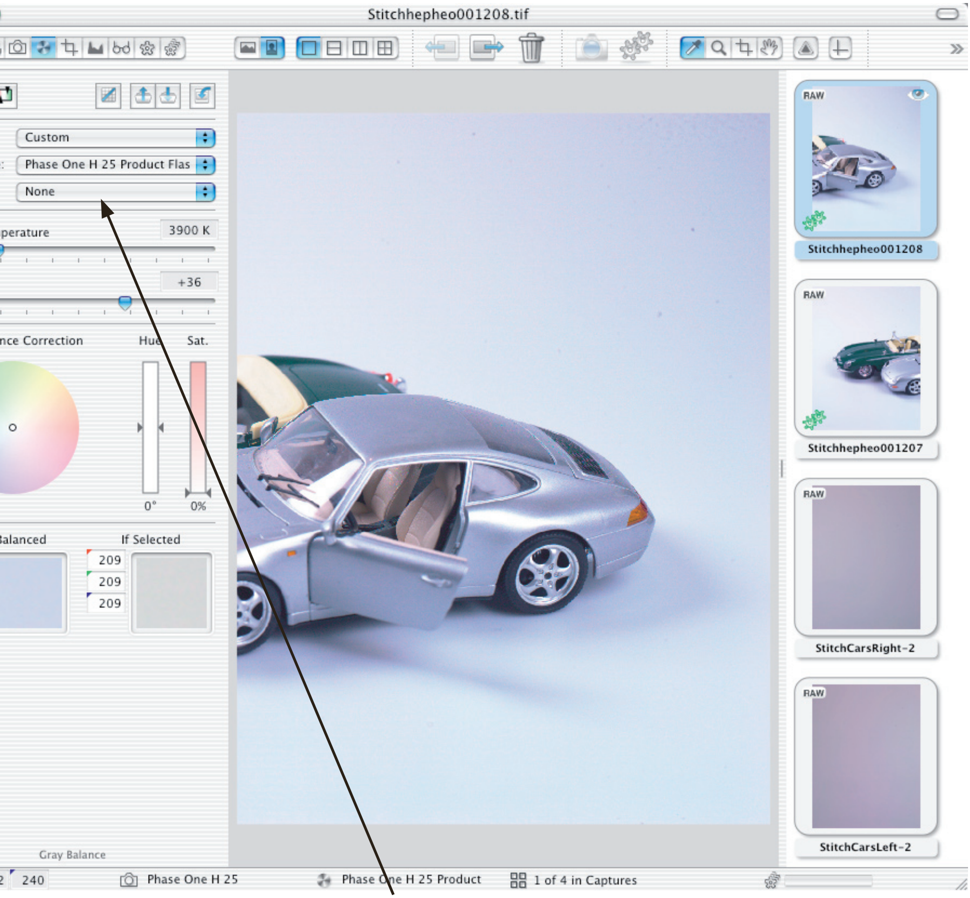
(remember to only select apply gray balance in the dialog).



Settings to apply:

☑ Gray balance
☐ ICC Profile
☐ Lens Cast Correction

Note:
To prevent this dialog from showing up, press the option key while clicking on the “Apply to selected” button.


Stitchhepheo001208.tif
Custom
Phase One H 25 Product Flas
None
perature
3900 K
+36
nce Correction
Hue
Sat.
0°
0%
alanced
If Selected
209
209
209
Gray Balance
240
Phase One H 25
Phase One H 25 Product
1 of 4 in Captures
RAW
Stitchhepheo001208
RAW
Stitchhepheo001207
RAW
StitchCarsRight-2
RAW
StitchCarsLeft-2

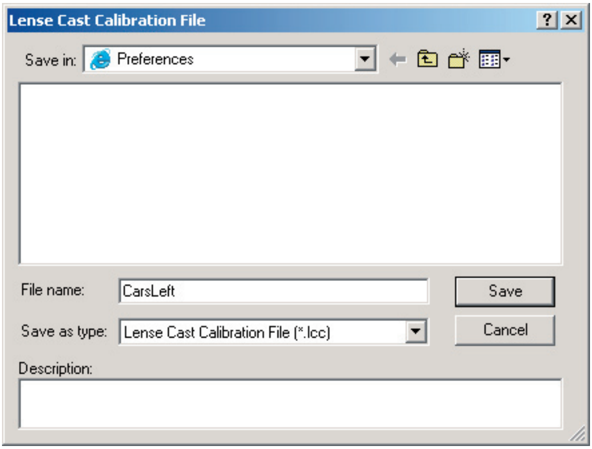
PLEASE NOTE: As soon as grey calibration is done and the calibration files are saved and appear in the Lens CC drop-down box the calibration files can be deleted from the thumbnail window.

4 Simple steps to calibrate ON fixed lenses (Win)

(no zoom, tilt or swing).

1. Hold the calibration plate in front of the fixed lens (as close as possible), and capture. In order to ensure correct exposure you may have to open up a few f-stops or in a very dark setup, put on more light directly onto the plate.

2. In the Capture One software you select the ‘calibration’ image and click on the “Generate...” button (the LCC tool is located under the white balance tab).



Lense Cast Calibration File

Save in: Preferences

File name: CarsLeft

Save as type: Lense Cast Calibration File (*.lcc)

Description:

3. Give the calibration file a name that corresponds to the lens in use or the set-up (e.g. 45mmDaylight)

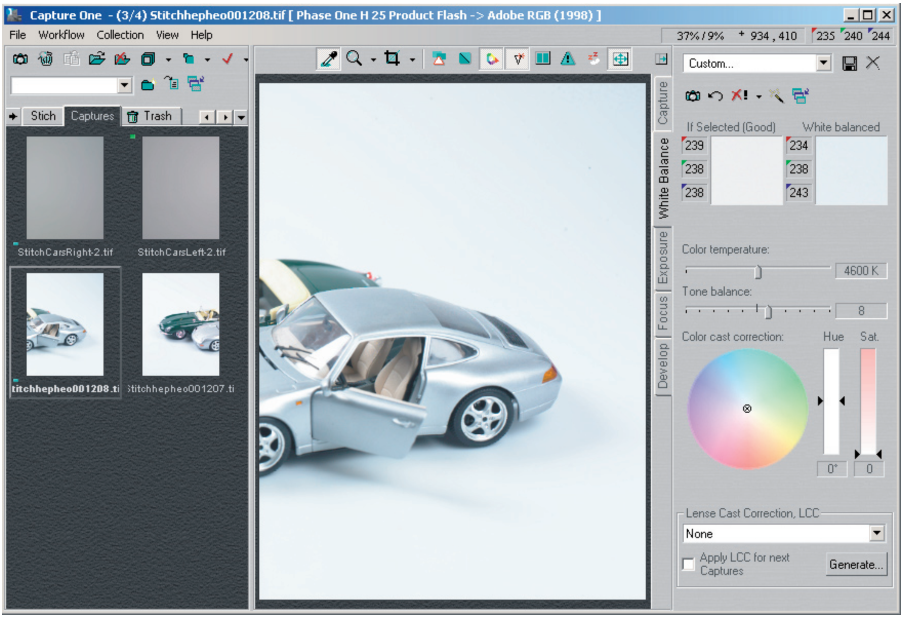
4. Select the calibration file: “45mmDaylight” from the “Lens CC” drop-down list and set a checkmark in the “Apply LCC for next Captures”.

If working with large format cameras with tilt and swing, you would have to make a new calibration file if you change the tilt and swing position.

When using LCC in combination with large format capture and image stitching you must capture one calibration file per image and make sure that you match the calibration file to the right image prior to stitching.

Large format and stitched images (Win):

1. Start by capturing the two calibration files and the two image files.
2. Save the left-side calibration file by clicking the “Generate...” button
3. Name the calibration file i.e.CarsLeft.
4. Save the right-side calibration file the same way.
5. Select the right-side image and apply the right-side calibration file. Select the left-side image and apply the left-side calibration file.
6. A simple way to white balance is to select all images in the thumbnail window and click on the left-side center of the right side calibration file and apply that white balance to all images by clicking the “Apply this White Balance to the current selection of captures”.


Capture One - (3/4) Stitchhepheo001208.tif [Phase One H 25 Product Flash -> Adobe RGB (1998)]
File
Workflow
Collection
View
Help
37% / 9%
934 , 410
235
240
244
Stich
Captures
Trash
StitchCarsRight-2.tif
StitchCarsLeft-2.tif
titchhepheo001208.ti
3titchhepheo001207.ti
Capture
White Balance
Exposure
Focus
Develop
Custom...
If Selected (Good)
White balanced
Color temperature:
Tone balance:
Color cast correction:
Hue
Sat.
Lense Cast Correction, LCC
Generate...

If Selected (Good): 239 238 238

White balanced: 234 238 243

Color temperature: 4600 K

Tone balance: 8

Color cast correction: Hue 0° Sat. 0

Lense Cast Correction, LCC: None

☐ Apply LCC for next Captures

17. Maintenance

Cleaning the CCD

When the Phase One P back is not attached to a camera, the camera back must be protected with the protection plate. However, over time dust may accumulate on the IR filter. This will degrade the image quality if not removed.

Please follow the directions included in the CCD cleaning kit in the P back suitcase.

18. Specifications

Full frame solutions (Magnification factor 1,1)

	P 25	**P 45**
Imager		
Technology:	Full Frame CCD	Full Frame CCD
Color filter:	Red, green, blue	Red, green, blue
Pixels (active):	5440 x 4080 pixels	7216 x 5412 pixels
CCD size (active):	48.9 x 36.9 mm	49.1 x 36.8 mm
Pixel size:	9 x 9 micron	6.8 x 6.8 micron
Image ratio:	4:3	4:3
Image output:	48 bits (16 per color)	48 bits (16 per color)
Anti blooming:	8 f-stops	8 f-stops
Digital image		
Color depth:	16 bit per color	16 bit per color
Dynamic range:	12 f-stop	12 f-stop
Single exposure:	5440 x 4080 pixels	7216 x 5412 pixels
	24 bit RGB: 65 MB	24 bit RGB: 65 MB
	48 bit RGB: 130 MB	48 bit RGB: 130 MB
	64 bit RGB: 173 MB	64 bit RGB: 173 MB
Two exposure:	7991 x 5440 pixels	10600 x 7216 pixels
	24 bit RGB: 127 MB	24 bit RGB: 219 MB
	48 bit RGB: 254 MB	48 bit RGB: 438 MB
	64 bit RGB: 339 MB	64 bit RGB: 585 MB
Sensitivity		
ISO:	50, 100, 200, 400, 800	50, 100, 200, 400
Camera System		

	P 25	**P 45**
Magnification factor compared to 645 system	1,1	1,1
Capture Rate	Up to 35 frames per minute	Up to 35 frames per minute
Writing speed to CF:	Up to 20 MB/sec depending on card	Up to 20 MB/sec depending on card
Battery type:	7.2 V Lithium Ion (BP-915 type) 2000mAh	7.2 V Lithium Ion (BP-915 type) 2000mAh
Battery lifetime:	250 captures/4 hours	250 captures/4 hours
Exposure time:	Several minutes to less than 1/10000	Several minutes to less than 1/10000
IR filter:	Mounted on CCD	Mounted on CCD
Orientation:	Automatic Image rotation (patented)	Automatic Image rotation (patented)
Power:	8 - 33 V DC	8 - 33 V DC
Data format	Phase One IIQ Raw (patent pending), TIFF-RGB, TIFF CMYK, JPEG	Phase One IIQ Raw (patent pending), TIFF-RGB, TIFF CMYK, JPEG
Color management	RGB, Embedded ICC profile, CMYK	RGB, Embedded ICC profile, CMYK
LCD screen		
Size:	2,2"	2,2"
Colors:	262,144 (18 bit)	262,144 (18 bit)
Information:	ISO, Filesize, Number of captures, battery level, Preview, Histogram, Exposure warning, EXIF	ISO, Filesize, Number of captures, battery level, Preview, Histogram, Exposure warning, EXIF
Functionality:	Image browsing, Zooming, ISO, white balance, custom WB.	Image browsing, Zooming, ISO, white balance, custom WB.
Lighting	Flash, Tungsten, daylight, fluorscent, HMI	Flash, Tungsten, daylight, fluorscent, HMI
Operating conditions		
Temperature:	0 to 40°C (32 to 122 °F)	0 to 40°C (32 to 122 °F)
Humidity:	15 to 80% RH (non condensing)	15 to 80% RH (non condensing)

	P 25	**P 45**
Camera support		
P-Series for Hasselblad V	555ELD, 553ELX, 503CW, 501CM	555ELD, 553ELX, 503CW, 501CM
P-Series for Hasselblad V and Phase One Mamiya adaptor:	Mamiya RZ67 PRO II	Mamiya RZ67 PRO II
The H 101 P-Series	Hasselblad H1	Hasselblad H1
P-Series for Mamiya:	645 AFD, 645AFDII, RZ67 PRO II D	645 AFD, 645AFDII, RZ67 PRO II D
P-Series for Contax:	645 AF	645 AF
All backs attaches to Large format 4"x5" via Phase One Flexadaptor for:	Arca Swiss, Cambo, Rollei Xact, Linhof M 679, Toyo, Sinar Horseman, Plaubel	Arca Swiss, Cambo, Rollei Xact, Linhof M 679, Toyo, Sinar Horseman, Plaubel
Computer requirements		
Mac: (minimum)	G4 500 MB RAM, FireWire Interface, Mac OSX	G4 1 GB RAM, FireWire Interface, Mac OSX
Mac: (recomended)	G5 2 GB RAM or more, FireWire Interface, Mac OSX	G5 2 GB RAM or more, FireWire Interface, Mac OSX
PC: (minimum)	PentiumIII , 500 MB RAM, IEEE 1394 Interface, Windows XP/2000	Pentium III, 1GB MB RAM, IEEE 1394 Interface, Windows XP/2000
PC: (recomended)	Pentium IIII , 2GB RAM or more, IEEE 1394 Interface, Windows XP/2000	Pentium III, 2GB RAM or more, IEEE 1394 Interface, Windows XP/2000
Certifications	CE	CE

Smaller than full frame solutions (Mag. factor 1,3 - 1,4)

	P 20	**P 21**	**P 30**
Imager			
Technology:	Full Frame CCD	Full Frame CCD	Full Frame CCD
Color filter:	Red, green, blue	Red, green, blue	Red, green, blue
Pixels (active):	4080 x 4080 pixels	4904 x 3678 pixels	6496 x 4872
CCD size (active):	39.6 x 39.6 mm	44,2 x 33.1 mm	44,2 x 33.1
Pixel size:	9 x 9 micron	6.8 x 6.8 micron	9 x 9 micron
Image ratio:	1:1	4:3	4:3
Image output:	48 bits (16 per color)	48 bits (16 per color)	48 bits (16 per color)
Anti blooming:	8 f-stops	10 f-stops	8 f-stops
Digital image			
Color depth:	16 bit per color	16 bit per color	16 bit per color
Dynamic range:	12 f-stop	12 f-stop	12 f-stop
Single exposure:	4080 x 4080 pixels	4904 x 3678 pixels	6496 x 4872
	24 bit RGB: 48 MB	24 bit RGB: 52 MB	24 bit RGB: 93 MB
	48 bit RGB: 96 MB	48 bit RGB: 104 MB	48 bit RGB: 186 MB
	64 bit RGB: 128 MB	64 bit RGB: 138 MB	64 bit RGB: 248 MB
Two exposure:	7991 x 4080 pixels	7150 x 4904 pixels	Not recomended
	24 bit RGB: 89 MB	24 bit RGB: 100 MB	-
	48 bit RGB: 178 MB	48 bit RGB: 200 MB	-
	64 bit RGB: 237 MB	64 bit RGB: 268 MB	-
Sensitivity			
ISO:	50, 100, 200, 400, 800	50, 100, 200, 400, 800	50, 100, 200, 400, 800
Camera System			
Magnification factor compared to 645 system	1,4	1,3	1,3
Capture Rate	Up to 45 frames per minute	Up to 60 frames per minute	Up to 45 frames per minute
Writing speed to CF:	Up to 20 MB/sec depending on card	Up to 20 MB/sec depending on card	Up to 20 MB/sec depending on card

	P 20	**P 21**	**P 30**
Battery type:	7.2 V Lithium Ion (BP-915 type) 2000mAh	7.2 V Lithium Ion (BP-915 type) 2000mAh	7.2 V Lithium Ion (BP-915 type) 2000mAh
Battery lifetime:	250 captures/4 hours	250 captures/4 hours	250 captures/4 hours
Exposure time:	Several minutes to less than 1/10000	Several minutes to less than 1/10000	Several minutes to less than 1/10000
IR filter:	Mounted on CCD	Mounted on CCD	Mounted on CCD
Orientation:	Automatic Image rotation (patented)	Automatic Image rotation (patented)	Automatic Image rotation (patented)
Power:	8 - 33 V DC	8 - 33 V DC	8 - 33 V DC
Data format	Phase One IIQ Raw (patent pending), TIFF-RGB, TIFF CMYK, JPEG	Phase One IIQ Raw (patent pending), TIFF-RGB, TIFF CMYK, JPEG	Phase One IIQ Raw (patent pending), TIFF-RGB, TIFF CMYK, JPEG
Color management	RGB, Embedded ICC profile, CMYK	RGB, Embedded ICC profile, CMYK	RGB, Embedded ICC profile, CMYK
LCD screen			
Size:	2,2"	2,2"	
Colors:	262,144 (18 bit)	262,144 (18 bit)	262,144 (18 bit)
Information:	ISO, Filesize, Number of captures, battery level, Preview, Histogram, Exposure warning, EXIF	ISO, Filesize, Number of captures, battery level, Preview, Histogram, Exposure warning, EXIF	ISO, Filesize, Number of captures, battery level, Preview, Histogram, Exposure warning, EXIF
Functionality:	Image browsing, Zooming, ISO, white balance, custom WB.	Image browsing, Zooming, ISO, white balance, custom WB.	Image browsing, Zooming, ISO, white balance, custom WB.
Lighting	Flash, Tungsten, daylight, fluorscent, HMI	Flash, Tungsten, daylight, fluorscent, HMI	Flash, Tungsten, daylight, fluorscent, HMI
Operating conditions			
Temperature:	0 to 40°C (32 to 122 °F)	0 to 40°C (32 to 122 °F)	0 to 40°C (32 to 122 °F)
Humidity:	15 to 80% RH (non condensing)	15 to 80% RH (non condensing)	15 to 80% RH (non condensing)
Camera support			
P-Series for Hasselblad V	555ELD, 553ELX, 503CW, 501CM	555ELD, 553ELX, 503CW, 501CM	555ELD, 553ELX, 503CW, 501CM

	P 20	**P 21**	**P 30**
P-Series for Hasselblad V and Phase One Mamiya adaptor:	Mamiya RZ67 PRO II	Mamiya RZ67 PRO II	Mamiya RZ67 PRO II
The H 101 P-Series	Hasselblad H1	Hasselblad H1	Hasselblad H1
P-Series for Mamiya:	645 AFD, 645AFDII, RZ67 PRO II D	645 AFD, 645AFDII, RZ67 PRO II D	645 AFD, 645AFDII, RZ67 PRO II D
P-Series for Contax:	645 AF	645 AF	645 AF
All backs attaches to Large format 4”x5” via Phase One Flexadaptor for:	Arca Swiss, Cambo, Rollei Xact, Linhof M 679, Toyo, Sinar Horseman, Plaubel	Arca Swiss, Cambo, Rollei Xact, Linhof M 679, Toyo, Sinar Horseman, Plaubel	Arca Swiss, Cambo, Rollei Xact, Linhof M 679, Toyo, Sinar Horseman, Plaubel
Computer requirements			
Mac: (minimum)	G4 500 MB RAM, FireWire Interface, Mac OSX	G4 1 GB RAM, FireWire Interface, Mac OSX	G4 1 GB RAM, FireWire Interface, Mac OSX
Mac: (recomended)	G5 2 GB RAM or more, FireWire Interface, Mac OSX	G5 2 GB RAM or more, FireWire Interface, Mac OSX	G5 2 GB RAM or more, FireWire Interface, Mac OSX
PC: (minimum)	Pentium , 500 MB RAM, IEEE 1394 Interface, Windows XP/2000	Pentium III, 1GB MB RAM, IEEE 1394 Interface, Windows XP/2000	Pentium III, 1GB MB RAM, IEEE 1394 Interface, Windows XP/2000
PC: (recomended)	Pentium IIII, 2 GB RAM or more, IEEE 1394 Interface, Windows XP/2000	Pentium IIII, 2GB RAM or more, IEEE 1394 Interface, Windows XP/2000	Pentium III, 1GB RAM or more, IEEE 1394 Interface, Windows XP/2000
Certifications	CE	CE	CE

19. CF Card and CardReader

Shipping products

Phase One is constantly following the progress in development of faster CF-cards and readers.

We currently ship our products with CF card and card readers from Sandisk (Value added puchase only)

This is a decision we made based on the speed, performance and compatibillity of the Sandisk products.

CompactFlash
SanDisk
Extreme III
ESP TECHNOLOGY
1.0GB
SanDisk

Sandisk Product Registration

You can register your memory card online at Sandisk's web site at http://www.sandisk.com/registration

Sandisk Technical Support

Visit SanDisk's web site, www.sandisk.com, or call 866-SANDISK (866-726-3475)

Between Monday - Friday: 7:00 A.M. - 4.00 P.M.Pacific

SanDisk Warranty

SanDisk's Warranty are available online at:

http://www.sandisk.com/retail/warranty.asp

SanDisk products are not covered by Phase One warranty, but solely covered by SanDisk's warranty.

SANDISK OR PHASE ONE SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTAL DAMAGES OR LOST DATA.

Rescue utility, when a card is unreadable

As previously described it can be pretty crucial to unplug a card from the P back while the P back is writing data to it (a red light indicates this).

Also disconnecting the battery or power from the P back, while writing to a card can damage the file structure.

In emergency situations, when a card is unintentionally damaged. It might be possible to extract the data or images anyway by using a special rescue utility "Rescue PRO" from the company LC-Technology.

They offer full featured trial versions of their rescuing software, and on top of that provides a special rescuing service, where you can send in a damaged card, if it proves that not even their tool can rescue the disk.

LC-Technology can be contacted at:

http://www.lc-tech.com/rescuepro.htm

If data is not an issue, but the card behaves erratically, try to format it on your computer, as described in the "CF-card Usage" section.

A CF-card can be damaged to an extent that it is even hard to format on a Windows computer (the computer can simply not mount it), but with a little patience it usually is possible to format the card. Although the communication with a damaged card is very slow.